The Builder.

VOL. LXXXVI.—No. 3198. MAY 21, 1904.

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Competition Design for Liverpool Cathedral: Perspective View ..... By Messrs. Nicholson and Corlette.
Kingsgate House, High Holborn ..... Mr. Arthur Keen, F.R.I.B.A., Architect.
Technical School and Free Library, Ramsgate ..... Mr. Stanley D. Adshead, Architect.
"Chestall House," Staffordshire / "One Ash," Loughboro' ..... The late Mr. Larner Sugden, Architect.

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French Painting and Sculpture of the Year.

THOSE who may go to Paris to see this year's Salons should beware of being misled by the foolish cant of newspaper "art-critics," repeated by rote for the last four or five years, that the New Salon is the exhibition of the higher and more intellectual artistic interest. It is now the fashion to say so, as it is the fashion to sneer at the Royal Academy exhibitions, if you want to take ground as an æsthetic and up-to-date critic; but there is no truth in it. The Old Salon no doubt contains a great many coarse and flaring works, though even in these a certain standard of execution is always maintained; the New Salon seems, at first sight, less glaring and better-arranged and hung. But it contains worse things than would ever be admitted into the Société des Artistes Français; and it would be interesting to know how the critics who maintain the peculiarly artistic atmosphere of the New Salon justify the presence there of such things as M. Anquetin's ceiling painting, or M. Jules Flandrin's childish "La Mascarade"; M. Koos's "La Vie Heureuse," with its figures of the colour and texture of sandstone; M. Désvallières' daubs of figures at the Moulin-Rouge, or M. Raffaëlli's "Paysage de Bretagne," which looks like a landscape drawn in what schoolboys call "red raddle" on a surface of coarse sandpaper. There are some beautiful things in the New Salon, and they are all the better appreciated, it may be admitted, because the pictures are less crowded and better grouped; but the fact remains that if you were to pick out all the good pictures in the Old Salon, you would have an exhibition which for power and variety would leave the New Salon nowhere. As to sculpture, there is no possible comparison; the sculptors, like the architects, cling nearly in a body to the old institution, M. Rodin being the sole exception of any importance.

The New Salon may boast, however, of the largest picture of the year, and a fine one too—M. Berteaux' immense canvas, "Bretagne Mystique," some 70 ft. in length, hung in one of the staircase halls, and intended for the staircase of the Art-Museum of Nantes. It represents a long votive procession coming along the cliffs overlooking the sea, and is a very favourable example of those large decorative pictures for public institutions, of which so many are produced in France, and so few, for want of any encouragement and opportunity, in England. The whole effect is fine and luminous, and the separate groups in the procession are interesting and carefully studied. A decorative picture is also the largest and one of the finest works in the Old Salon, M. Henri Martin's triptych "Travail," representing in its three compartments morning, midday, and evening. Like the "Bretagne" picture, this is art glorifying every-day life; and M. Martin's peculiar technique (carried almost to excess here), in which the pigment seems to be put on in ridges, assists in this case in giving an abstract effect to the picture and enabling him to treat real life without becoming too realistic; the "midday" section of the picture, representing work at the docks, is a remarkable example of rich yet subdued colour obtained from a representation of ordinary working-men at an every-day task, the result depending to a great extent on the rough texture and surface of the painting, which gives depth and precludes hardness. This picture is for the decoration of the Savings Bank at Marseilles. There are one or two of those official paintings by which the authorities generally like to memorialise a public ceremony; M. Tattegrain has been told off to commemorate the "Cérémonie des Récompenses" in connexion with the 1900 Exhibition—a task which suits his special gifts well enough, though, if better painted, it is not more interesting than such pictures usually are; and M. Chartran paints, by State Commission, the celebration of the Victor Hugo centenary in the Panthéon; one would wish to see him employed an another kind of task, but he has made a bright and effective representation of the scene.

There is no indication of any special movement in French art this year, unless it be that there is rather a tendency towards pictures with a moral or meaning of some kind. Thus M. J. Paul Laurens exhibits as his principal work a very large painting called "Les Mineurs," a melancholy scene in which a long file of miners, men and women, released from their work, tramp over mounds of mine and furnace refuse, with sad worn faces; smoke and chimneys filling up the background. It is a sombre painting, the main object of which is an appeal to our humanitarian

sympathies. His other work, "Luther et ses Disciples," where Luther lectures to a few of his followers in a Gothic chamber (perhaps Wurtzburg), behind an open Bible lighted by a candle in front, is also obviously didactic in its tendency; but it is a finely imagined and effective scene. The desire to point a meaning relative to the present day has rather wrecked M. Gervais for this year; his "Vers la Lumière," a ceiling painting for a library, is a kind of symbolism of the modern effect of electric power, by no means very decorative or pictorial, with its engines and telegraph-wires twisted about among flying figures; he has rather thrown away his genius both on this and on his satirical picture of centaurs and nude nymphs flying in alarm up the banks at the sight of an automobile on the road; the classic groups are very good, no doubt, but the picture is an elaborate joke that was hardly worth the ability displayed in it. M. Hippolyte Flandrin has produced a moral work of more serious and pathetic import in his "Jésus pleure sur la Ville," illustrating the verse, "and when he beheld the city, he wept over it," etc. "La Ville" is not Jerusalem, but modern Paris, which forms the background to the very beautiful and expressive figure of Christ; there is a fine solemn feeling about it, and it is certainly a far superior work, both in sentiment and in artistic refinement, to the one in the Royal Academy, in which the same kind of contrast between the figure of Christ and the vanities of the world is symbolised; there is no harsh and theatrical contrast of real and ideal, for the view of the modern city is quite subordinate in the composition, only sufficient to show what is intended. While on Biblical subjects one may mention also M. Humbert's fine picture "L'Inévitable," in which something of a new turn is given to the old subject of the expulsion of Adam and Eve from Paradise, the dark avenging angel hovering immediately behind them; there is a pathos in the face of Eve which raises this quite out of the category of the ordinary "Bible picture."

The keen æsthetic perception of French artists in regard to the relation between design and material is admirably illustrated in M. Toudouze's "La Mort de du Guesclin," an extraordinary-looking work with flat figures as if cut out, and decorative angels in the foreground, which, seen among the other paintings, impresses one at first as a mere piece of eccentricity; until we find, on reference to the catalogue, that it is a painting to be executed in tapestry at the Gobelins. Then we see what the artist was aiming at, and recognise that he has produced exactly the kind of thing that is best suited for tapestry. The work, when carried out, is to form a decoration for the principal chamber of the Parliament House of Rennes.

The taste for surgical and clinical pictures is still kept up, as witness M. Jonas's very realistic and unpleasant picture, "La Leçon de Dissection," not redeemed, as in the dissection picture of a greater master, by any nobility in the heads or the composition. Among other uncomely features of the Old Salon are such vulgarities as M. Galand's "American Bar" and the "Mi-Carême" of Mr. Mac-Cameron, a Chicago-born painter who is (save the mark!) a pupil of M. Raphael Collin; one can but wonder what that painter of lovely poetic visions thinks of this work of his pupil. Among this class of pictures of the realities of Parisian life M. Buland's "L'Inquisition chez les bouilleurs de cru, en 1901," is redeemed by its dramatic vivacity of character, especially in the figure of the official taking notes with his eye on the delinquent. It is not decorative certainly, but it is a phase of modern life represented with great force and humour.

Among the class of pictures which are purely decorative and imaginative there is perhaps not one which touches the highest of which French art is capable, but there are some fine things; notably M. Benner's "Dans l'Ombre de la Pensée," two draped ideal figures regarding each other solemnly by a dark and lonely water in a deep ravine. M. Raphael Collin shows all his usual poetry and delicacy both of artistic style and sentiment in his beautiful half-length of a nymph under trees, with the title "Silence." Some of the best drawn and best executed works of this class fail of effect from a total lack of poetic sentiment. M. Bouguereau of course fails in this respect; his one picture, "Une Dryade," a nude with one leg drawn up in a rather awkward attitude, is a masterpiece of drawing, but when you have said that you have said all. M. Zier's "Crépuscule," a nude figure seated among sea-weed covered rocks, the upper part of the figure relieved against the evening sky, would have been a fine thing if he had but put some expression into the head; but there he fails us, and loses a fine opportunity. Among pictures which are simply figure-studies and hardly profess to be more, there is one small work by M. Friant in the New Salon—"Peinture mystique," where a nude model poses for an artist who is painting an angel; the figure of the model, only a few inches high, may perhaps justly be said to be the finest piece of painting, purely as perfection of execution, in the whole of the two Salons; and perfection of execution is always something. A larger-size nude study, "Paresse," by Mdme. Lee-Robbins, an American by birth, also in the New Salon, is a masterly piece of work of its kind, simply as an "Etude" in position and drawing, though the colour is somewhat dingy and uncertain. Of what the French students call "conscientious nudes" there are of course plenty of examples, many of them very good, but their interest is rather academical.

Paintings of society scenes, indoors and outdoors, seem very much in vogue, and many of them do not show much to justify their scale and the degree of talent in mere execution displayed in them. Pictures of this class should either illustrate some problem in execution, or suggest something beyond the mere representation, if they are to be taken seriously. A dinner-table scene in the New Salon, "Entre Intimes," for instance, by M. Bouvet, is a most realistic representation of a dinner-table and of a middle-class French family; one can almost fancy one knew the people, but one could not fancy them interesting to know; nor does the picture, clever as it is in a way, amount to anything more than clever imitation. M. Caro-Delvaille's "Ma Femme et ses Sœurs" is just as uninteresting, save that it has a little more of decisively-marked style in the treatment of the subject; this has been purchased by the State, why it would be hard to say; perhaps to encourage a new man. The State purchases from the Salons are very capricious and devoid of any guiding principle. Topographical landscapes seem to be rather favoured, perhaps with the intention of presenting them to some public building in town or neighbourhood illustrated; at all events they are seldom among the most remarkable works of the year, though always meritorious; the Government is well advised on that score and will hardly be found purchasing a bad picture. Probably personal considerations, or the popular interest of a subject, weigh a good deal; though this is hardly the best way for the State to encourage art. In the Old Salon there are one or two society pictures which stand out from the ordinary run for their special interest and significance. Among these is M. Ridel's "Histoire d'un Passé," an earnest conversation between two ladies over their dessert, the one bending over and evidently speaking low to the other; there is a dramatic interest in this; it affects us like a scene out of one of Brada's novels; and as to style, M. Ridel is never weak or commonplace. Another is M. Rieder's "Soir d'Eté," an interior with one figure seated by lamplight, another leaning over a balcony in the twilight, looking out on the sea; this also stirs the fancy and suggests a story, and is more than a mere representation of ordinary surroundings. One small society picture, the "Punch" of M. Michaud, though it tells no story, attracts one by sheer ability and force of composition and colour; it is merely a girl standing in an ante-room making the punch, with part of the lighted dining-room seen through a door—commonplace enough in idea, but the admirable treatment of the whole scene gives it individuality. An interesting example of the treatment of a scene of *vie intime* in a decorative sense is furnished by M. Aman-Jean's "La Confidence (Panneau Decoratif)," in the New Salon; a large outdoor picture where a lady sits on a garden seat and another leans over it from behind to talk with her; a mass of foliage fills up the background; the work is truly decorative in effect, and at the same time suggestive in the way of sentiment, a combination of interest that is not very often found in painting, and is proportionately interesting. Then there is M. Béraud's small and most minutely studied painting "Le Cercle," which is certainly not decorative any more than men in a club-room are usually decorative; it is a kind of painting that constitutes a criticism of life, and a very shrewd and merciless one; as such it is rigorous and pointed to a degree, and evidently finished *con amore:* style, it must be admitted, there is none, but most conscientious finish of detail, and great satirical power.

Among the few figure pictures of the New Salon that are really interesting are to be noted M. Agache's "Deuil," two women kneeling by a crimson-draped coffin; a picture which combines pathos with fine lines of composition; and M. La Touche's "La Fille des Fauns," another of the paintings of the year with a moral, and (if we read it right) a very striking one, though hardly one to be understood by chance spectators. As a matter of colour and effect it is one of the artist's most effective works. In "Sur les Cimes," a figure of a bloodless lady seated among mountain peaks, M. Dagnan-Bouveret is doing the kind of thing that Leighton used to do, but by no means so well. There is some interest in M. Louis Picard's experiments with female figures half lost in a kind of golden haze of light; it is a trick of art, but the results in this case are certainly not without poetic suggestiveness. Mr. Cottet, who promised to be a remarkable painter, now goes to the opposite extreme from M. Picard, and paints figures in the middle of landscape in so hard and crude a fashion that they look as if cut out of pasteboard; and in his "Jour de Fête," moreover, the faces of the figures are hardly distinguishable in colour and texture from the middle distance field behind them. M. Cottet is a lost man unless he gets out of this groove.

There are many fine and effective portraits this year; no single one that can be picked out as the portrait of the year, but perhaps a larger number than usual that are striking successes as combining artistic and original pictorial effect with (it is to be assumed) personal verisimilitude. M. Bonnat's leading work is a simple, straightforward portrait of an American gentleman; a likeness merely, but a vigorously-painted one. Among portraits of more special artistic interest M. Chabas has a group of four round a table ("Coin de Table") which makes a most completely balanced picture. Among many others one may pick out especially M. François Flameng's "Portrait de la Baronne de R——," seated, in a purple cloak; a very fine and forcible painting; that the lady's waist is too small is probably not the fault of the artist. There is M. Aimé Morot's charming group of his own wife and daughter; and in the New Salon a very attractive portrait group of a mother and boy by M. Morisset, exceptionally good both in composition and colour. But by far the majority of the really fine portraits are to be found in the Old Salon. To the latter belong also the successes in battle pictures; among them is M. Sergent's small painting of Ney, bare-headed, charging at the head of a body of cavalry at Waterloo, and a large picture by M. Hoffbauer (who, in spite of his name, is a Parisian by birth and the pupil of three leading Paris artists) "Coin de Bataille," a kind of Erckmann-Chatrian painting of the ugly realities of war; a corner of a wood where there has been a fight, and only the results of it are visible. This also, we supposed, may be grouped among the pictures with a moral. In the matter of still life painting, too, one may say that the Old Salon carries off all the honours, culminating in M. Grun's "Interieur Breton," which is quite sublime in the painting of the great brass vessel that forms the salient feature of the scene.

Landscapes at the Old Salon raise "obstinate questionings" concerning the real object of landscape-painting; some of the finest differ so greatly in their aims and methods. M. Harpignies' two works are the perfection of a noble and intellectual convention of style, not so much imitating as translating nature. M. Didier-Pouget's large painting, "Le Matin dans la Corrèze," is a piece of actual creation over again of a romantic piece of landscape, with a vividness and force of realism which are quite astonishing; as a mere piece of representation of nature it would crush everything in our London exhibition, and almost converts one to realistic landscape. On a smaller scale and in less romantic subjects M. Biva has achieved an astonishing truth of effect in his representations of foliage and its reflection in water; but here one must admit that the quality shown is talent and painstaking rather than genius; Harpignies represents the higher school, the higher theory of landscape painting. Both Salons are strong in landscape; in the Old one may mention especially M. Lecomte's exceedingly fine picture, "Mortefontaine," so perfectly balanced in all its elements; one is not surprised to find that he is a pupil of M. Harpignies. And in the New Salon M. Lhermitte's "Moisson dans la Vallée" is perhaps the most perfectly satisfactory picture to be found there. There is also a group of small landscapes by M. Iwill which are of remarkable excellence; and M. Albert Dagnaux, in two small pictures, has made the interesting experiment, which we do not remember to have seen made before, of painting the same scene, "Bords de la Seine à Mantes," twice over from almost the same point of view, in sunshine and in storm; an instructive comparative study of effect.

In sculpture there is no work of supreme interest this year; no one of those productions which, once seen, can ever be forgotten; yet the vitality and energy of French sculpture, and the generally high standard of execution, are astonishing. It is no exaggeration to say that from the crowd of works in the central court of the Old Salon you could pick out a sufficient number of really good works—not all of the same interest, but all up to a high standard—to fill the whole of the rooms at the Royal Academy, supposing the works to be spaced so as to be properly seen. The popular attraction this year is Gérome's posthumous work "Corinth," a nude figure seated cross-legged on the top of a gilded Corinthian capital, bedecked with jewellery executed in enamels, and tinted to something approaching the colour of nature. Its exhibition in London would send the "British matron" into hysterics—not altogether without excuse. It is a very sensuous piece of work, absolutely devoid of intellectual interest. The exhibition is fortunately not without some of those examples of an intellectual idea expressed through sculpture which form the highest achievements of the art; among them M. Gustave Michel's figure of an astronomer with a chart of orbits in one hand, and with the title "Extase de l'Infini"; a truly noble work in every sense. M. Mercié exhibits his monument to de Musset, in which the poet, looking very sentimental in a cloak, sits on a rock, while a draped Muse on tiptoe behind him points with one hand. One would guess from it that the sculptor was not very much in sympathy with de Musset, who in fact is now regarded in France as rather out of date. M. Coutan exhibits a front of a funeral chapel, with fine figures representing "l'Espérance et La Prière" on either side of the portal; the whole composition is completed by a large crowning group, "Vers l'Infini," exhibited separately; a figure rising from the tomb amid marble clouds and angels, which is far too boisterous in its movement for sculpture, and reminds one too much of the sensational monuments of Roubiliac. Among works connected more or less with architecture, are M. Bartholdi's model for a monument in memory of the balloon and pigeon service of the siege; M. Carlier's "La Danse Profane," a spirited figure for the decoration of the garden of the Palais de l'Elysée; M. Desvergnes' fountain with nymph figures, for a dining room in the Magasins de Louvre; M. Ducuing's robust caryatide, "L'Automne," for the Palais de Sorrento; and M. Graf's fine bas-relief "Les Arts," for the façade of the new museum at Clermont-Ferrand. Among other striking works are M. Jean Boucher's "Devant la Mer," a nude group composed on very severe lines, and M. Carlus' monument to Pierre Vaux. Among works which attract by pure beauty apart from any special idea are M. Lemaire's "Offrande à l'Autel d'Amour," M. Levasseur's "Nymphe à la Source," and M. Thivier's "l'Ivresse," a figure slumbering in the recess of a rock. M. Roussel shows a bas-relief recumbent figure as a monument to Larroumet, with Paris in low relief as a background; M. Moreau-Vauthier exhibits one group only of a projected great monument to Peace, full of splendid meanings and prophecies; realism is recognised in M. Dieterlé's group of men pushing off a boat, Gérome's "Ouvrier Metallurgiste," and M. Boverie's colossal figure of Camille Desmoulins mounting on the tavern chair to make his celebrated harangue; while the delicate humour possible in sculpture is illustrated in M. Blondat's mischievous little "Amour" perched on a column (purchased by the State) and in his charming "Enfants et Grenouilles," three little nude children seated on the edge of a fountain basin and laughing at the frogs. But we could fill another column with notes of things that are all more or less worth looking at. It is a remarkable spectacle.

LIVERPOOL SCHOOL OF ARCHITECTURE AND APPLIED ART.—The special art scholarship of 60*l.* given by the Liverpool Education Committee has just been awarded to Miss Phœbe G. M'Leish, of this school. The scholarship is tenable for one year at London or some art centre on the Continent. Miss M'Leish has been a student at the School of Architecture and Applied Art of the University of Liverpool for the last four years, and has held the municipal 30*l.* scholarship, besides gaining other prizes.

NOTES.

"Structures" in Advance of Building Line.

THE case of the London County Council *v.* The Illuminated Advertisements Company, decided by the Divisional Court last week, raises a question of some importance under the London Building Act, 1894. An information had been laid against the respondents under sections 22 and 200 (3) for erecting or bringing forward a structure beyond the general building line without the consent in writing of the Council. The "structure" in question was an advertisement frame containing advertisement cases. The cases were supported on wrought iron supports passing through the front wall of the building, and the cases projected 10 in. out from the wall, which was 14 in. less than the projection of the cornices. The magistrate found that these cases and the supporting frame were not "structures" within the meaning of the Act, but were mere excrescences removable at will, and he held that they could not amount to an infringement of the Act by constituting a bringing forward of the building. The Divisional Court upheld this finding, but Mr. Justice Wills dissented and expressed an opinion that these cases formed part of the building as long as they remained annexed to it. It is to be observed that there are other sections of the Act which seem to have a more direct application to such excrescences or projections as these cases; for instance, section 73 is directed to "projections" other than shop windows, copings, water pipes, string courses, cornices, etc.; but in the case of Hull *v.* London County Council this section was held only to apply to projections in the nature of architectural projections or decorations, and to have no application to a wooden case attached to the external wall of a building by iron brackets and used as an advertising sign; and no doubt this decision was the cause of the present information being laid under a different section. The Lord Chief Justice has now expressed some doubt as to the correctness of the decision in Hull *v.* London County Council, so another case may soon be carried to the Court of Appeal to determine the real application of section 73.

Legal Rights of Sub-lessees.

THE case of Gray *v.* Bonsall, reported in the Law Reports of April, is one to be noted by underlessees of house property. The decision turns on section 4 of the Conveyancing Act of 1892, which was passed to afford underlessees relief when the lessee was enforcing a right to re-enter upon the premises in consequence of a breach of covenant on the part of his lessee. Attempts have been made to whittle away the effects of this section by arguing that its intention was merely to extend to underlessees the benefits already conferred upon lessees by the Conveyancing Act of 1881; which Act, however, did not afford relief from forfeiture on the breach of certain covenants such, for instance, as breaches of covenant to pay rent or not to sublet or assign the premises. The present decision makes it clear that no such limitation is to be placed on the Act of 1892, and it thus affords some security to underlessees, who otherwise might have had no relief or at any rate could only obtain relief in a more cumbrous form of legal proceeding than that provided by modern statutes for breaches of covenant on the part of persons for whom they are not responsible, and over whom they have no control.

Steam Turbines in Electrical Engineering.

THE paper by Messrs. Parsons, Stoney, and Martin on "The Steam Turbine as Applied to Electrical Engineering," which was read to the Institution of Electrical Engineers last week, is one of very great merit. The historical part is most interesting, and the conclusions the authors arrive at are obtained by rigorous reasoning. It was stated that up to the present time there were turbines of the Parsons type aggregating 800,000 horse-power at work in England and on the Continent, so that the steam turbine has now become a most formidable rival to the best reciprocating steam engines. Generally speaking, increasing the speed of a dynamo increases its output, and so high-speed dynamos are more economical than low-speed machines. The Parsons form of turbine is specially suited for the direct driving of high-speed dynamos. Apparently very little difficulty was experienced in devising bearings suitable for such high speeds, and unlike the cases of high speed reciprocating engines suitable for direct coupling to dynamos, there seems to have been no difficulty in connexion with the "whirling" and the consequent fracture of shafts. This may be due possibly to the very high speeds employed. Dr. Chree recently explained to the Physical Society how the period of the lateral vibration of a rotating shaft depended on the angular velocity with which it was rotating, and his proof shows that with very high speeds there is less risk of fracture of the shaft than at low speeds. Numerous tables are given in the paper showing the results obtained with the turbo-generators in use in various parts of the country. The results obtained are very satisfactory, especially when a condenser is used. A good vacuum is of great importance in a turbine, as the expansion of the steam can be carried down until the pressure equals the vacuum in the condenser. This cannot be done in a reciprocating engine, as the size of the low-pressure cylinder would need to be excessive. Owing to the high speed of turbines, carbon brushes cannot be used on the commutators of the dynamos. In practice brushes made of brass wire are found very satisfactory, but a special winding of the armature has to be employed in order to obtain satisfactory commutation.

A Suggested Use for Radium.

SOME recent radiographs made in Philadelphia by the aid of radium-bromide show that the emanations from this substance are able to penetrate cast iron without difficulty, and steel to a smaller degree. In one of these experiments, two pieces of cast iron and a piece of steel were tested, the cast iron being laid on a strip of lead—a metal almost impermeable to radium emanations. After an exposure of thirty-eight hours the negative was developed, and it then became evident that the rays had passed through both pieces of cast iron, and were intercepted by the lead, so that a distinct image of the latter was visible beneath the fainter shadow of the cast iron. Although less permeable, the steel had clearly been penetrated by the rays. These results are of considerable interest, and suggest the use of radium as a practical means of detecting flaws in metals, which are impermeable to the X-rays.

Architectural Education in Edinburgh.

THE Edinburgh Architectural Association has presented to the Edinburgh Town Council a memorial on the subject of the professional education of architects, and the present and possible future opportunities afforded for it in Edinburgh. After giving some account of the opportunities for education in London, the memorial goes on to approve of the Heriot-Watt College and the Edinburgh School of Art as worthy of support, though the former suffers from insufficient accommodation and presents no systematic course of instruction in architectural history and detail; history especially being mentioned as always a difficulty with architectural students in Edinburgh, "who are driven to expensive correspondence classes of doubtful value or to unaided private reading, in place of the systematic training given elsewhere. Architectural history and historic detail cannot be taught in the hurry of office work." The memorial goes on to recommend that, in any reconstruction of art education, the architectural school should be kept a distinct section of the general art school, under its own director, who should be an architect, and expresses satisfaction with the instruction given at the School of Applied Art under Sir Rowand Anderson. The memorialists consider that the system under which the School of Applied Art has been administered—direct control by practising architects—is by far the most efficient, and that an enlargement of this school on the lines indicated would be the simplest and most satisfactory method of supplying the needs of architectural education in Edinburgh.

Staple-inn, Holborn.

ADVERTING to the paper upon the history of the inn which Mr. T. Cato Worsfold read at a meeting of the London Topographical Society on last Saturday, we may mention that in our columns of February 20, 1886, and June 11, 1887, we published some measured drawings by Mr. Roland W. Paul and Mr. Paul Waterhouse, respectively, of details of the minstrels' gallery, the roof, and other portions of the hall of the inn which afford interesting examples of the elegant and piquant variations of Classic types that are found in English XVIth century Renaissance work. Mr. Paul Waterhouse prepared his drawings of the lantern bay of the roof after some necessary repairs had been executed in May, 1887, by Messrs. Holland and Hannen, under Mr. Alfred Waterhouse's superintendence, for the Prudential Assurance Company, for whom Mr. Alfred Waterhouse also repaired the

woodwork of the Holborn front and removed the plaster covering over the old half-timber work. On one of the elaborately-carved corbels of the hall roofing is cut "1581: R. C." A peculiarity of the ornamentation should be noticed in the designs of the pendants from the lantern and of some large objects which, quite independently from the construction, stand upon the hammer-beams. The design and carving of those objects and pendants are similar to what we find amongst the native carvings in New Zealand and the islands in the Pacific Ocean. The windows contain some good heraldic glass—in the south bay are the royal coat-of-arms and motto of King James I. Stow, in his Survey, and Sir George Buc, in his history of the Legal University of London, record that the hall and certain other parts of Staple-inn were newly rebuilt for the then Inn of Chancery appertaining to Gray's Inn of Court. Whilst its name is derived, by common report, from the migration thither, *temp.* Richard II., of the Merchants of the Staple from New Palace-yard, Westminster, we read in the late Mr. Blott's remarkable book upon the chronicle of Bloomsbury that on that spot, on the hill's crest at Holborn Bars, stood Essex House, a fortress of Geoffrey de Magnaville, lord of Essex in William the Conqueror's day, and that the cognisance—a wool pack or sack—of the inn points back to much earlier times, when the fort or castle formed the official house and court of the King's Justiciary, Lord Chief Justice of England. Messrs. George Trollope and Sons purchased the whole real property of the inn from the ten or eleven "Ancients" in 1884 for some 80,000*l.*, and, having sold the southern portion, comprising No. 11, built in 1699, and Nos. 12-3, built in 1843 after Wigg and Pownall's designs in the late Elizabethan style, to H.M.'s Office of Works for 32,000*l.*, subsequently disposed of the remainder of the property.

Mr. Arthur Hughes's Exhibition.

IN the solitude of Mr. Dunthorne's small gallery in Vigo-street is hidden away a collection of forty-nine small oil paintings, mostly landscapes, which, if attendance at exhibitions went more by merit and less by fashion, ought to be one of the most frequented of the smaller exhibitions now open. These are some of the recent work of Mr. Arthur Hughes, all combining poetic feeling for the sentiment of nature with most conscientious finish and delicacy of execution. There is not a picture in the collection that is not worth attention, though some are more beautiful than others. Among those that more especially delighted us are "The Farm by the Sea" (20), "Summer" (22), "Spring" (27), and "Cliff Searchers" (41). The last named is a view over open sea from the top of a cliff, and is one of the most remarkable pieces of painting of the effect of sea under a breeze and in bright sunlight that we have ever seen. No detail is neglected in these small landscapes; as an instance, notice the careful painting of the horses, on such a small scale, in "Harvest" (19), and the foreground detail in nearly all the landscapes. The crow in the foreground of No. 13, a very careful study, seems however a little too large in comparison with the boy. Among the two or three figure pictures, which (as one need not say to those who know this artist's work) are as learnedly drawn and as carefully finished as the landscapes, is a figure of a beautiful young girl seated and looking upwards, under the title "Faith" (40). It is melancholy to find such a collection of pictures in an empty room; but this is a kind of art which does not appeal to the crowd. We were precluded by circumstances from mentioning the exhibition last week; but we hope some of our readers who care for art will go and see it before it closes.

Mrs. Allingham's Exhibition.

THE Fine Art Society have on view a collection of one hundred of Mrs. Allingham's water-colours, scenes of English country life and views in Venice. The latter, as we have before noticed, forms Mrs. Allingham's new departure. Her chief successes in the Venice series are not in the larger architectural scenes so much as in the small corners of Venice, where two or three figures and a fruit-stall form the main elements of the pictures. Mrs. Allingham has evidently been much attracted by the combinations of colour to be found in the fruit stalls, and has turned them to beautiful artistic use in such drawings as Nos. 15, 18, 24, 88, and others. The larger architectural scenes are effective rather in a landscape sense than in an architectural sense—which perhaps, after all, is what was intended; and in fact the painters who can treat architecture in such a manner as to combine pictorial effect with the kind of representation of the architecture that would satisfy an architect are few, and far between; generally speaking, either the picturesque or the architectural element has to give up something. There is an interesting and rather new view of the Campanile of Torcello (11). Mrs. Allingham's principal successes are still, and not unnaturally, in the class of scenes which she has been painting for so many years—English country foregrounds and figures; for as a rule these charming works are concerned more with small nooks than with wide sweeps of landscape. Among these are some which are equal to anything the artist has produced; we may mention especially "The Edge of the Beech Wood" (33); "A Dorset Cottage" (34); "Early Spring on the North Downs, Kent" (47); and "In the High Fields near Whitby" (59).

Landscape Miniatures.

AT the Goupil Gallery is a collection of seventeen paintings of Italian landscapes on ivory, as miniatures, by Mrs. Konody. Effectively set in broad white decorative mounts, with a very deep sinking, these are undoubtedly pretty productions, and show a great deal of delicate and painstaking work; but the conditions of painting on ivory seem to preclude anything but a very conventional treatment of colour in representing natural scenery, and it is not a form of art with which we have much sympathy—it is rather like reducing landscape to *bijouterie*.

The Queen Victoria Memorial.

LAST week, at the Royal Institution, Mr. M. H. Spielmann gave what was evidently a very interesting and attractive Friday evening lecture on the Queen Victoria Memorial; giving a number of illustrations of other memorials to royal personages, and of the designs submitted for the Queen Victoria Memorial. Mr. Spielmann concluded with the opinion, which we have frequently expressed, that the front of Buckingham Palace was the really incongruous feature of the whole; if there was a free processional road leading up to the palace, we wanted a fine palace to lead up to. That we refer to the lecture in this hearsay fashion is due to the fact that the editor of this journal, who had intended to be present, was delayed by a breakdown on a railway, and did not reach town till too late.

ARCHITECTURE AT THE ROYAL ACADEMY.—II.

IT cannot be said that any particular phase of current British work is adequately represented in this year's exhibition. It is, moreover, noticeable that a large proportion of the public buildings shown are unsuccessful competitive designs of no great merit, and occupy a large area of the limited wall space of the room.

The Hull Town Hall Competition is the chief example in this respect. We have already noticed two of the designs. Of the remainder, No. 1,492, by Mr. J. Hatchard Smith, receives considerable prominence in the matter of hanging. The design is typical of present-day competition work, in which a classic order, standing upon a rusticated ground story, is intended to proclaim the municipal nature of the work. We have drawn attention before to the popular treatment of pediments in current designs, but in this case the author outherods Herod in his minor pediments where both the segmental head and straight bed mould are broken off so short as to lose the idea of the feature altogether. The tower is too squat for what we are accustomed to in town halls, otherwise the composition is sound. This is a good drawing without a plan. No. 1,575, by Mr. Alexander Koch, is a mediæval treatment of the same subject with a high-pitched roof and flèche in the centre; the style, however, is less suitable than the use of classic forms, but this attempt is instructive as showing the contrast in the minds of architects.

The Cape Town University competition supplies two more designs, Nos. 1,567 and 1,657, neither of which, in our opinion, are of sufficient merit for hanging in the Architectural Room. Nos. 1,616 and 1,625 are charmingly drawn elevations and sections of a competitive design for the South Wales University, by Mr. J. Belcher, A.R.A.; the plan, however, is missing, and an intelligent appreciation of the conception is not possible. We may refer our readers, however, to our issue of January 23, 1904, when we published these drawings, together with plans. Designs for smaller municipal buildings are Nos. 1,464, by Mr. A. A. Carder, and 1,599, by Mr. J. A. Minty, both of which have characteristics which might usefully be employed in more important buildings of this class.

There are several exhibits of designs for municipal buildings actually completed or in course of erection. Following the order of the catalogue, we find the Public Offices, Hendon, by Mr. T. H. Watson (No. 1,439), rendered by a somewhat weak drawing, hung rather high. Red brick and stone for the walls, and green slates on the roofs, are materials which can be used to greater advantage than here shown. No plan is given, and the design does not readily convey an idea of the disposition of the respective parts. The side front takes an unpleasant line, which the space at disposal, as indicated on the drawing, does not appear to warrant.

As illustrating the range of treatment of any one kind of building in this country, "Public Offices, Camberwell" (1,460), by Mr. E. T. Hall, is instructive. A plan is not given, and our first impression of the drawing is that this is a Kursaal. The main front has a square

tower-like projection at each end, an oriel window rises with a square head into the roof, while a small cornice is interposed between these features. In the middle of the return front a semi-circular stone bay window, with a conical slate roof, rises from a square brick projection. But for the massing of the materials this design would lose all its importance. The roofing is not broad enough in treatment, and the dignity of the whole is marred by the boundary wall and iron railing. Mr. Mayston's "New Town Hall and Fire Station, Sutton Coldfield" (1,522), is a convenient working scheme, published in our issue of April 16, under the authorship of Messrs. Mayston and Eddison; a re-arrangement of the plan, however, would have helped toward a better general composition. The tower is unhappy, both in its relation to the whole and in actual detail; the little turret rising behind a parapet is poor. No doubt the town hall is more effective from the rear, but one rather inclines to seeing those features which tell the purpose of the building, written on the "front page." The "Aldershot Town Hall and Fire Station" (1,496), by Mr. C. E. Hutchinson, has better detail, but is lacking in importance for a building of this character. Three distinct blocks are shown in the drawing, but there is no plan to explain the purposes for which they are used.

Designs for public libraries naturally appear on the walls. "The Passmore Edwards Library, Bow" (1,436), by Mr. S. B. Russell, is a small building of which the entrance part is shown in a clever coloured sketch. "Central Library, Hammersmith" (1,540), is designed by Mr. G. Sedger, and is probably an unsuccessful competitive scheme. The drawing is nicely treated in monochrome, although the broad surfaces of the brickwork would have been more telling if colour had been employed. Messrs. Sutton and Gregory are responsible for an excellent stone design for the "Free Library, Mansfield, Notts" (1,552), in which the scale and general detail are very satisfactory. A cornice and parapet run round the building, broken only on the entrance front by a pediment forming the gable end of the front roof; the tympanum contains a large semi-circular arch, enclosing a large trophy, in which a shield bearing an inscription is supported by two allegorical figures. Two smaller broken pediments are also introduced on this front, the omission of which would remove the only disturbing element in this interesting design. No plan is given, but we are inclined to agree with Mr. Norman Shaw, who once said that an architect who could design a satisfactory elevation would probably make a good plan. "Library and Museum, Limerick," by Messrs. Swann and Wright (1,623), is a building which at once represents what it is intended to be—a library on the ground floor, and a museum upstairs—and this is a great point. Two slight sketch plans are given without scale and compass points, but they indicate that the plan is good. In criticising the design we should say that the news-room should have an approach nearer the main entrance to avoid noisy traffic interrupting the working of the other departments. Then, as a matter of detail, the use of flat pediments in front of the hipped ends of steeper roofs is false, and the result is not happy. The drawing is well rendered in lamp black, but we should have preferred colour as affording some idea of the materials, and we think it would give greater satisfaction to the authorities who direct the destiny of this section of the annual exhibition of British Art.

The "Kettering Free Library" (1,647), by Messrs. Goddard, Paget, and Catlow, is a nicely-drawn perspective view of a successful competitive design; the building was publicly opened a few days ago. On April 25, 1903, we published plans, elevations, and sections, but it may be interesting to recall that the lending library, which is really the basis of the scheme, is arranged upon the "open access" principle, with the stacks of books radiating from the delivery counter. The whole building appears to be excellently lighted, and should prove a simple working institution.

Of the remaining buildings of a public nature, "Design for Railway Station, Johannesburg" (1,474), is the most attractive. This is presumably a stone-fronted building, having an arcaded ground story, with a glass overhanging shelter, several floors of what appear to be offices—there is no plan—and an open colonnaded loggia with enclosed ends, at the eaves level. It is a very effective composition, in which the broad wall surface treatment is most valuable; there is, however, no feature or element to suggest a railway station. The clock tower, evidently a stone structure on the building line, rises from a semi-circular pediment out of the tiled roof, but no visible provision is made in the loggia for carrying the extra weight. The authors, Messrs. Baker, Masey, and Sloper, are also represented by a design for a "Bank in Johannesburg" (1,473). This is an interesting stone building, with an angle entrance. The use of an order, above which is an attic story, suggests an Italian influence which no doubt lends itself to the South African climate. When completed these buildings will go far toward raising the standard of taste in matters architectural in this modern town.

"St. John's Hospital, Leicester Square" (1,431), by Messrs. Treadwell and Martin, is a re-building of an interesting XVIIIth century house, the disappearance of which will be a material loss to the late Renaissance buildings of London. No doubt the old premises were found inconvenient for hospital requirements, and unsuited to the treatment of skin diseases, but we cannot say that the new stone front, which has heavily mullioned windows, is any advance upon the old double hung sashes. There is no plan shown with the drawing, and our inference is that none of the medical work of the hospital will be undertaken in the front rooms.

"Savoy Hotel" extension (1,603) is a disappointing design for so important a work, but it is only fair to presume, from particulars which we have at various times published, that the author, Mr. T. E. Collcutt, was hurried beyond all possibility of producing a great work.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE usual fortnightly meeting of the Institute was held on Monday evening at No. 9, Conduit-street, under the chairmanship of Mr. Aston Webb, R.A., the President.

The minutes of the special general meeting and the annual general meeting were taken as read.

Deceased Members.

Mr. Alex. Graham, Hon. Sec., said it was always an unpleasant duty to announce the decease of any colleague, but that night he had to announce the death of three. The first was Mr. Norman Michael Brown, of Newport, an Associate, elected in 1887. The second was Mr. F. W. Tasker, elected an Associate in 1874 and a Fellow in 1903. Mr. Tasker was well known to most of them, and he believed they would all say that he ranked not only as a very estimable man, but as a very good architect. Many of his works were well known to them, and, although he was only elected a Fellow last year, they had reason to regret the loss of a man who was likely to have left a name behind him as an architect of distinction. Lastly he had to record the death of one familiar to all of them—Mr. G. H. Birch, who retired an Associate of the Institute a short time ago. Mr. Birch in recent years held the post of curator of the Soane Museum. He was a man who through all his life was an architect and a diligent student of architecture, and as curator of the Museum none, he supposed, who had held the post ever fulfilled the duties in a more excellent way than did Mr. Birch, and he was sure the trustees would have great difficulty in finding a man the equal in all respects of their late lamented colleague.

The Chairman said he wished to add something to what Mr. Graham had said. Two of the names which had been mentioned were very old friends of his own and of many other architects. Mr. Tasker, who only died on Saturday, very suddenly, was a Catholic architect, as probably they all knew. He (the Chairman) was a member of the Architectural Association and attended the classes of Design with him. He was a man of singularly outspoken views both on art and other matters. In those days in the Class of Design they used to criticise each other's works very candidly. He remembered very well Mr. Tasker amongst those from whom they used to hear the most candid criticisms, but he was a man who spoke his mind without malice and left no ill-will behind. He was fortunate in being the nephew of Miss Tasker, a most benevolent lady of the Catholic Church, and this gave him chances early in life of important commissions. One of the earliest of these, he believed, was the college in St. Charles-square, Notting-hill. At her death, Mr. Tasker had so proved his ability that to the end of his life he always had sufficient work from the church to which he belonged. He always looked upon Mr. Tasker as a man of remarkable ability and one of the men who could have built a cathedral had he had the opportunity of doing so. He left behind him a son whom he hoped would be able to succeed him. Mr. George H. Birch, who was buried on Saturday last, was also a great friend of himself and most of those who were in the Association at the same time. He was a man who gave himself from his earliest time to archæological pursuits in connexion with architecture, and perhaps the work he would be best known by would be the Old London which he created at Earl's Court. Of course, now, anybody could produce an Old London, but Mr. Birch was the first to do it, and it had never been so well done as by him. He belonged to a small coterie, of which he (the President) was also one, who for over twenty-five years met month by month at each other's houses to sketch and draw, and one could get to know a man well under those circumstances. He remembered well Mr. Birch explaining Old London, which certainly for architectural research and truth was most excellent, and at the time was entirely a new idea. As a literary man also Mr. Birch did a great deal of work, and perhaps the best thing of his was "Wren's Churches of the City of London," which was really an important work not only for the photographs, but for the very careful account of the different buildings which were represented. There was also a very picturesque little church at Dartmouth which he built; but owing to lack of funds it was never developed quite as fully as otherwise he was sure Mr. Birch would have been able to develop it. For the last ten years he had been the curator of the Soane Museum of which he (the President) was one of the trustees, and he would like to testify to the great obligation the trustees were under to Mr. Birch for the great care he always bestowed on that museum.

Board of Defence.

The Chairman said he was desired by the Council to make the announcement that the Council had decided after very careful consideration, and after the matter had been reported upon by a Committee, to institute a Board of Professional Defence, the object of this body being that when members of the Institute had legal difficulties of such a nature that might be of general interest to the profession to have a legal opinion upon, they would be able to come to this Committee and ask them whether they would assist them with counsel's advice as to the course they should adopt. In France architects had long had such a Committee, and it was thought time we in England should have something of the same sort. They had only that night decided to form this Committee of defence, and in due course there would appear particulars of the formation of the Committee, and the conditions under which members of the Institute would be able to apply for assistance.

The Rev. J. B. Lock, M.A., then read a paper, of which the following is an abstract, on

The Planning of Collegiate Buildings.

The author opened his paper by a reference to the colleges which have come down to us from the XIVth and XVth centuries, which were all built on much the same plan, the various parts being grouped round an enclosed court. The buildings were never more than two floors in height. To the lowness and narrowness characteristic of them the author attributed the beauty and feeling of rest that seems to pervade the old courts. The free admission of sunlight and air into the courts is also secured by keeping down the height of the buildings. When Dr. Caius enlarged Gonville Hall by building what is now called Caius Court, he bounded his court on the south side by a wall broken only by the insertion therein of his beautiful Gate of Honour, and in his statutes he expressly forbade the erection of any building which should completely enclose this court on the south side, "lest the air from being confined within a narrow space should become foul."

The old arrangement by which the buildings

were in general only one room deep caused the kitchens, etc., to be placed at one end of the hall, which had the advantage of keeping the odours of the cooking to some extent out of the hall. At the kitchen end of the hall it was customary to have a passage going right through the building and cut off from the hall by a screen with a gallery above. In modern times the passage has in many cases become a thoroughfare leading from the old court to newer courts beyond, with the consequent disadvantage that all the kitchen service now passes across the busy thoroughfare. The position of the hall recently built at Girton College is obviously convenient. It is placed at some distance from the students' rooms, and is approached by the students from two directions, through an enclosed passage or cloister opening into the hall on its south side while the kitchens are placed in a separate building on the north side of the hall.

In the olden time the Master simply had his one or two rooms in which he lived, a bachelor. In modern times the master requires a good house with all the offices and belongings of a modern residence. So that the lodges of our day are either curious and interesting conglomerations of buildings gradually annexed or added by successive masters, or are brand-new modern mansions built on detached sites.

Coming to the Fellows' and Students' rooms, the plan of the sets of chambers or men's rooms in the ancient building was a very simple matter. The building was merely sliced up by the insertion of stacks of chimneys and wooden partitions, with staircases of one flight at the proper intervals. In colleges at the present day ranges of buildings containing living-rooms have to be divided up into sets, each set containing at least one sitting-room, a bedroom, and a pantry or gyp's room.

The following points should be borne in mind with respect to a set of rooms. Usually each set should be enclosed by a stout door called the oak or sport-door. The sitting-room should have some sunlight. The bed-room should not have less than 100 square feet of floor spacing, plenty of window space that can be opened, a place for the bed out of the draught, and a chimney and other means of ventilation. There should be provision for the passage of a current of fresh air through the rooms when the sport-door is closed; for this purpose the windows of the sitting-room and bedroom should not all face the same way. The author went on to consider how these points could best be obtained.

Economy of space in nearly all cases demands buildings of three floors and an attic, and the colleges nearly always ask that at least eight sets of rooms shall be provided on each staircase. The arrangement of four sets of rooms on each floor approached by one staircase would have many obvious advantages if a plan could be devised free from objections, but this is not easy. In the only instance the author knew of in which it had been adopted at Oxford or Cambridge the plan had so many hygienic defects that it could not be said to be successful. There was no possibility of a through ventilation of any one of the four sets of rooms, except through one of the others; the passages were without direct light or ventilation; the scout's hole was outside all the sets of rooms; the lobby was badly lighted and badly ventilated, and was larger than was necessary.

As to what is the best typical arrangement of sets of college rooms, the author had made a careful comparison of plans adopted in recent times at both Oxford and Cambridge, and had come to the conclusion that the plan recently adopted, quite independently, by Mr. Champneys at New College, Oxford, and by Messrs. Aston Webb and Ingress Bell at Gonville and Caius College, Cambridge, was one of the best.

Showing plans of St. Michael's Court, Caius College, the author described the arrangement. The building faces south-west towards a narrow court. The staircase is on the north-east, and is approached from the court through a passage about four feet wide. On the ground floor on each side of this passage is a set of rooms, of which the keeping rooms face south-west, the bedrooms north-east; the gyp-rooms also face north-east (a good aspect for a pantry). When the sport-doors are shut, the opening of a window in sitting-room and bed-room, one on each side of the building, gives excellent ventilation. The staircase is thoroughly well ventilated; with a window open on the staircase, air can blow right through the building from the entrance passage to this window. On the first floor, as the space over the entrance passage is available, the whole frontage to the south is at disposal for division between the two sitting-rooms. In the plan adopted at Caius College the space over this passage is all thrown into one room, making the rooms on each side of unequal size; at New College, Oxford, this space is divided equally between the two sitting-rooms.

Comparing plans of modern buildings, the author pointed out one or two objections to the arrangement adopted in the new buildings of Tree Court at Caius College. One is that the gyp-room opens directly on to the staircase landing and is not included within the sport-door. A more important objection is that the staircase has no independent through ventilation.

The rule that a court set aside for sets of rooms only should have no buildings on its south side has been very generally observed in recent additions to colleges at Oxford and Cambridge, so that these additions have usually taken the form of a straight line, or of an L, or of a U.

It has been the custom at Oxford and Cambridge in planning out the allotted space into sets of rooms to practically choose a certain arrangement and then repeat that arrangement on each staircase. In the recent work at Caius College, however, the irregularity of the site was such that uniformity of plan could only be attained by sacrifice of space, and the authorities had to determine how far irregularity of plan was objectionable. In the end they decided that it was desirable rather than otherwise, and the architects were instructed to give as much variety in size and shape (within certain limits) of the rooms as they conveniently could. The result in the new court at Caius is that there are hardly two sets of rooms out of fifty which are exactly alike.

The irregular site of St. Michael's Court is practically an L with an angle at the corner of about 120 deg., and the plan adopted by the architects seems a solution of the difficulty of how to deal with an L or U shaped corner, provided it is not a condition that all rooms shall be rectangular. To illustrate the advantages of the arrangement, the author showed this plan adapted to the first floor of the building in the corner of the Tree Court, Caius College, so that it could be compared with the existing arrangement. The new plan gives two sets of rooms, with sitting-rooms, each facing south-west, of very irregular, but not uncomfortable, shapes. The existing plan provides two sets of rooms which in size and shape are excellent, but one set has all its windows looking north. And as the building looks on to a narrow lane with high buildings on the opposite side, the rooms, notwithstanding their good size and shape, were not popular. The corresponding rooms on the ground floor were practically unsuitable for habitation, and were used as offices.

Three main points the author emphasised in the planning of college buildings—viz.: (1) the desirability of having some sunlight in the sitting-room in all cases; (2) the importance of it being possible to set up a through current of air through every set of rooms independently of the staircase; (3) the desirability of having a through current of air through the staircase itself. The plan recommended provided all these advantages in rooms facing south or east or west. The point raised as to the desirability of having windows in living-rooms on more than one side, applied with equal or greater force to all rooms intended to be used as chapels, halls, lecture-rooms, laboratories, or class-rooms.

In concluding, the author begged architects not to grudge a large share of attention to the use to which a building was to be put. He fancied he remembered reading a report of a speech by the President in which he advised architects not to put *all* they knew into a façade. He (the author) asked them to give a large share of their genius and experience to the planning of the building.

Mr. Basil Champneys said it was but a short time since he delivered himself on the same subject, but it was exceedingly probable that the audience of that night was an entirely different one. Mr. Lock, in his paper, had dwelt more upon the practical than upon the historical, but he, no doubt, knew as well as he (the speaker) did that the whole system of college rooms was absolutely transformed from that of the XVIth and XVIIth centuries. The old plan was that there should be one large room, where a master of arts and students slept together, and, adjoining this room, and generally opening out of it, were two small studies. A great many of these survived in the old buildings at New College. When that was the case a very small college would accommodate a good many students. Supposing that one of these sets took one master and possibly half a dozen students, there would be accommodation in the same building for six times as many as was the case as soon as each student required separate rooms. When that time came the large room was usually taken as the undergraduates' sitting-room, one of the small bedrooms was taken as his bedroom, and the other served as a gyp room. There were many college buildings surviving in which the old partitions remained the same as they were built in the XIVth and XVth centuries, and it was simply the uses of the rooms which had been altered. That change had, of course, affected the questions both of height and of size. In the old days they did not require to build upwards, as two floors were probably all they wanted, and the later buildings were for the most part confined to two floors and an attic. He believed that Mr. Lock said that the economists of the present day required three floors and an attic. If it was so, he was bound to say that he much regretted it. He had rarely seen three floors and an attic which did not look altogether too high, and he himself so far had been fortunate in persuading his clients never to go beyond two floors and an attic, and hoped in the future that he would be equally successful. In the paper he had read he had dwelt on that point, and mentioned one or two buildings which did not satisfy him from the æsthetic side. There was this practical aspect of the matter also that college servants did feel stairs very considerably. Only the other day the bursar of one of the colleges for which he was preparing certain plans pressed upon him the necessity of making the stairs easy because of the servants constantly complaining of the staircases. He most certainly hoped that the fourth floor would not be pressed on the architect in the future. With regard to the size of the quadrangle, he agreed that if they could leave the south side open it was of enormous advantage to the buildings, but they could not always secure a southern aspect for all the sitting-rooms. Where it was possible it was best to be done. With regard to the Masters' Court at Trinity College, Cambridge, he quite agreed that the size of the quadrangle was absolutely insufficient. He was one of the first occupants of these rooms when they were built. Fortunately, he had rooms which looked into All Souls Passage, and so he got plenty of light and air. There was a question which Mr. Lock did not touch upon, except indirectly, which, however, was a matter of some importance: whether fireplaces were a necessity in bedrooms. Personally, he had no very great belief in the ventilating power of fireplaces when there were no fires in them. He thought they were just as apt to work downwards as upwards, and when they worked downwards there was a sooty kind of atmosphere introduced which he thought would do rather more harm than good. Certainly, in his experience these fireplaces were rarely used, and he fancied they might be neglected. Nowadays, of course, they were not so absolutely dependent upon windows as they were, for they had many means of obtaining ventilation not known to their ancestors. There were a few little practical points he would like to refer to. First, with regard to the gyp rooms, as they called them at Cambridge, or scouts' holes, as they were called at Oxford. It was the tendency to make one fair-sized room answer for the whole staircase, instead of the little cupboard with a sink in it attached to each room, with no stove or anything of that kind. Lately it had been found useful to have a somewhat larger gyp room containing a gas or some other stove, the advantage of which was that when people did not have fires they could get hot water. Then there was the question of coal stores, which had also been a matter of discussion lately. Where there was not much spare space it was a somewhat difficult matter to get storage for the undergraduates' coal. He felt that the best solution of the difficulty was for a rate for coal to be charged, and that it should all come from a common store. That system prevailed in many colleges with regard to the electric light and so on. Mr. Lock did not touch on the

question of baths, but he found they were more and more needed. The principal point, however, which he wanted to refer to, was the staircase arrangement. He had lately had to meet the problem of getting the largest possible number of rooms into a very limited space, and he found that he could get this far better by making the staircase altogether external to the main block, and of the spiral type. He had not done it yet, but he was going to do it for the first time, and would be able to find out how it worked. He found, however, that on one side he would be able to save 11 ft., and on the other side 22 ft. by adopting this plan. The space was excessively valuable, and in that connexion at least there were advantages, and he did not see at present that there were any necessary disadvantages attending that plan. However, he spoke as a person about to embark on an experiment.

Mr. E. S. Prior expressed the extreme pleasure it gave him to come there, one reason being that they, as architects, had heard a lay speaker. They had heard someone outside their own particular view, and he felt that it was very necessary for them to consider that there was another view outside their own as architects. He attended a congress of architects some years ago, and a speaker there eloquently, and at great length, put forth how the architect was the beginning and end of practically every function of modern life. He thought at the time that was probably going a little beyond what was correct, and it seemed to him, in fact, that the architect came in subsidiary to the user. The architect was contributory, he would not say to the intelligence, but contributory to the imagination necessary to put the users' intelligence to the purpose for which it was intended. He supposed the earliest collegiate buildings in the British Isles were the collection of hermits' cells known as oratories, which consisted of a bell-shaped chamber, with a seat on one side on which the occupant passed his days. The development had gone on day by day until they came to the present. The XVth, XVIth, and XVIIth centuries had all contributed their share, and now he thought the collegiate building had shifted into something different. It had really become a collection of flats. Mr. Lock had said it was best to have the south side of the court open, and there they got to flats, and another point brought out was the common gyp rooms with stoves. There again they drifted to the new order. If that was so, and they were necessarily drifting into something else, why should they go back to the picturesque time and of necessity make their new college buildings in a style no longer fitted for their requirements? They tried to produce the effects of the old style, but it could not be done, because modern requirements compelled different proportions and size. Therefore he felt that they ought to discourage the collegiate style in college buildings if they were going to be built merely for the uses for which they were intended.

Mr. Locke (Secretary) asked how, in the plan shown by Mr. Lock, the bed maker managed to arrange the effects of the different undergraduates. When he was up he used to use the gyp room of another man on the same landing, which opened immediately on to his, and, consequently, this man's butter and cheese, and whiskey and brandy, and beer were all mixed up inexplicably with his own.

The Rev. J. B. Lock, in reply, said that when they were planning St. Michael's Court he had to go to Oxford for the purpose of going over all the new buildings which had been erected in the last fifty years, and in Mr. Bodley's building at Magdalen he met a scout on the staircase who was taking some things to his rooms below. He asked the scout, "Would you prefer to have on the staircase a sink and wash-up place, or do you prefer to do everything down in your own room?" And the scout said that he much preferred to take things down to his own room. St. Michael's Court was a building of five stories—a basement, three floors, and an attic—and at the bottom of the staircase there was a little room in which there was a sink, and arranged so that the bed-maker always had a fire, which he thought was a very great advantage. On the staircases were certain cupboards, which they called gyp rooms. These were intended to afford accommodation for sorting out the butter and the brandy, and other things which the undergraduate liked to keep for himself. Mr. Champneys had touched on one or two matters which showed him that he had thought a great deal about the planning of college rooms, and he had spoken of the hard work it was for the bed-maker to go upstairs. Their architects suggested that they should have wooden treads on their floors, and he could assure them that the bed-makers thoroughly appreciated that. Their staircases were very ingeniously made in a way he had never seen before, of cement covered with oak treads. On the second floor was put a waste, so that the bed-makers had not to carry it downstairs. With regard to the doors between the bedrooms and sitting-rooms, he did not think it was necessary for ventilation, because the two doors were so close together. In their rooms they had an opening near the ceiling, and in every bedroom there was a fireplace, and with such an arrangement as that he thought that fireplaces were a good thing, as there was a circulation of air if they had warmth in a room. With regard to the storage of coals they had solved that problem; the only difficulty being as to the size of the coal-box to let the coals down. The question of baths was a very pressing one, and a committee had been appointed at St. Michael's Court to see how they could best be provided. He believed that the solution would be to have two or three shower baths with dressing-rooms. All those little things required a great deal of thought, and, as Mr. Champneys had shown, it required experience properly to solve the problems.

Mr. A. W. S. Cross, in proposing a vote of thanks for what he described as a most able paper, said that in the Rev. J. B. Lock they had not only a scholar who, through a series of mathematical works, had materially assisted to lighten the burden of many an unfortunate undergraduate in his struggles with the inevitable but to him highly unnecessary examinations which often embittered his university career, but they had also a gentleman to whom all members of his college owed a debt of gratitude for the able and satisfactory manner in which he had administered its finances for so many years past. Mr. Lock had shown them that evening that if he had directed his attention to architecture he could scarcely have failed to attain high rank in one or more of its branches. He (the speaker) had inspected the new building with which their President had enriched the town of Cambridge, and he wished that the deep interest that Mr. Lock evinced in every detail of the arrangements were more often displayed by an architect's client.

Mr. H. G. Ibberson seconded the vote of thanks, and referred to the practical qualities which Mr. Lock had displayed in the management of his college. There were certain remarks made with reference to dealing with old courts, that he would like to refer to. Mr. Champneys had suggested that the staircases should be placed projecting into the court rather than into the building, but it did appear to him that from an æsthetic point of view that would break the repose of the façade, and from a practical point of view it would break up the air spaces in the court and make the circulation unsatisfactory.

The Chairman said that they had had a most instructive evening, and were very much indebted to Mr. Lock. Mr. Jackson, who had had so much experience of buildings of this class, had written to say that he would have much liked to have been present, but Mr. Jackson had been ill, and although he was glad to say he was better, he was not yet able to come out at night. They all appeared to agree with Mr. Lock that the height of the buildings should be reduced to two stories and an attic. He regretted that in the particular case in which Mr. Lock was concerned he had had to fix the height at three floors and an attic, and it only showed the difficulty of carrying out in practice the principles they held in theory. With regard to the quadrangle being surrounded on three sides and open to the south, he ventured to say that that was not quite sufficient to secure the through draught which Mr. Lock was anxious for. With regard to the staircase, for instance, if they only had a window at one end they did not get a through draught, and he was afraid that with a quadrangle open only to the south they would not get a through draught. They had a well-known example of that when driving in a hansom cab, where if there was a wind, they sometimes found the doors fly open with the pressure created by the air in the cab. Really the only way he thought, if they wanted cross ventilation, was to have the angles open also, and a well-known example of that was the quadrangles of St. Bartholomew's Hospital at Smithfield, which had existed a great many years longer than it would have otherwise done owing to the angles being open and a through circulation thus secured. With regard to gyp rooms, neither Mr. Bell nor himself had had the advantage, unfortunately, of being University men, and they had, to some extent, to find things out. They were rather surprised when they came to close quarters, to find that although there were gyp rooms in Cambridge, yet there was no such thing as a gyp; he believed they called them bedders. Now it seemed to him that one good room down below was the best arrangement at the present time, with a little pantry attaching to each floor. He was sure they all agreed as to aspect. If a young man had to live in a single room for a good many hours in the day the room ought to have some sun. Pembroke College and those beautiful buildings which Mr. Gilbert Scott built, he happened to know very well. Those keeping rooms faced the north, and it was the only thing one had to find fault with. They went on to the staircase and found it all sunny, but in the rooms they found it cold and somewhat depressing. As to the details of the gyp rooms—the coal boxes, etc., Mr. Lock had been good enough to refer to those. He need hardly say that all those ingenious contrivances were absolutely Mr. Lock's, and if everyone had his due, certainly Mr. Lock's name should have been on that plan as well as his own and Mr. Bell's, for Mr. Lock settled the general disposition of the rooms and supplied those details. He entirely agreed with Mr. Prior that the architect's business was not entirely to override his client, but to work with him, and he thought that all reasonable architects were only too glad to have the suggestions and help of those who were going to use the building, and who must very often know the requirements better than the architect. Certainly in this case Mr. Lock was the architect of the greater portion of these arrangements, and he thought the part he was responsible for had turned out extremely well. He thought that colleges ought certainly to have baths, and he was glad to hear that night that in St. Michael's Court they would be provided later on. He thought that was a thing that ought to be encouraged amongst young men, and also that there should be hot water on each floor so that they would not have to boil all the water in kettles to the great danger of the undergraduates and the building generally. Also there were certain sanitary conveniences which ought to be provided in all university buildings. At the end of his paper Mr. Lock had rather "let fly" at architects by asking them not only to consider the outside of the building, and he ascribed a saying to him (the Chairman) that architects put everything they knew into the façade. It was a curious thing that the public should think that architects thought only of the front and took no trouble about the inside. The curious thing, however, was that if they asked architects at the present time, most of them would say that the tendency of architects nowadays was to think too much of the inside and not enough of the front. He was quite sure that the development of planning at the present time had gone more rapidly forward than the development of the character of the achitectural work they carried out. He hoped that Mr. Lock would take it that they did think of the inside, and that they quite agreed with him that a building to be worth anything must be a building adapted for the particular purpose for which it was to be used.

The resolution was then carried.

Board of Education.

The Chairman said he had to announce that the Council had that day appointed a Board of Education, the object of which was to endeavour to draw up a report which should co-ordinate and utilise the means of education throughout the country for the benefit of architecture generally. In due time he hoped that report would be laid before the Institute, and that it might lead to good results, as he believed it would.

The Next Meeting.

The Chairman said he had to announce that the next meeting would be held on June 6, when the results of the annual elections would be announced, and afterwards the adjourned discussion on plenum ventilation would take place. Previous to the meeting, a special general

meeting would be held, at which the following motion would be proposed from the chair:—"That the following words be added to end of the first clause of by-law 3—'After December 31, 1906, every person desiring to be admitted a Fellow shall be required to have passed the examination or examinations qualifying him as an Associate, always providing that in exceptional circumstances the Council, by an unanimous vote, shall have power to dispense with such examination or examinations.'"

THE ARCHITECTURAL ASSOCIATION:

ANNUAL DINNER.

THE members' dinner of the Architectural Association was held on Friday evening last week at the Criterion Restaurant. Mr. H. T. Hare, the President, presided, supported by Professor Beresford Pite, Professor Hulme, and Messrs. Maurice B. Adams, Cole Adams, R. S. Balfour, E. Guy Dawber, Leonard Stokes, Max Clarke, T. Costigan, J. S. Gibson, E. Greenop, W. J. Locke, Louis Ambler, A. H. Belcher, Arthur Bolton, C. H. Brodie, H. G. Collins, Arthur Keen, Burke Downing, Banister F. Fletcher, Neil Forsyth, F. Hooper, W. H. Jamieson, H. J. Leaning, W. G. B. Lewis, F. Lishman, H. Lovegrove, H. P. G. Maule, A. E. Munby, J. Murray, G. Nicholson, H. Passmore, E. H. Payne, W. A. Pite, J. MacLaren Ross, H. B. Ransom, T. Sudsuki, W. W. Scott-Moncrieff, C. J. Tait, H. Tanner, H. Tanner, jun., T. H. Watson, W. Wonnacott, T. C. Yates, D. G. Driver, Secretary, and others.

The toast of "The King, Queen, and Royal Family" was proposed by the Chairman, who said that now that the Association occupied the Royal Architectural Museum in Tufton-street they were in a sense under Royal patronage, and that, consequently, the toast would appeal to them even more than it ordinarily would.

The toast having been suitably honoured,

The Chairman next proposed "The Royal Institute of British Architects," coupled with the name of Mr. W. J. Locke, Secretary of the Institute. The Chairman said that a large number of those present that evening were members of the Institute, and those who were not and were not visitors were, he was sure, desirous of becoming members. In those circumstances, they would drink the toast with the greatest enthusiasm.

Mr. Locke, in response, said that if he responded truly for the Royal Institute of British Architects he would take up rather too much time, and, as speeches were to be short, he would limit his remarks to what concerned the Association. He had had the pleasure of going over the new premises of the Association, and, when he gazed around at the magnificent space the Association had at its command—at all the comfortable rooms and arrangements, "replete with every modern convenience" (to use the sacred and beautiful words of the estate agent)—and when he returned to No. 9, Conduit-street, and saw how cramped the Institute was; when he looked at the two lavatory basins, and compared that with the lavish arrangements at Tufton-street; and when he remembered that whenever an extra roll of drawings came to hand it required an anxious consultation between himself and his staff to know where to put them, he was filled with envy—a noble envy, an envy that stimulates; and he hoped that the Institute would some day have a palace that would vie with that now secured by the Association.

Mr. J. S. Gibson, in proposing the toast of "The Architectural Association," referred to the frank and hearty manner in which the Association opened its doors to all the architectural students who came to London, either to perfect their education or, if they came from the far north, to teach the poor southerners something they did not know. There was one thing which always endeared the Association to him, and that was the fact that it opened its doors to men of all nationalities, and it made them all welcome and, as far as that was possible, treated them all impartially. One could always tell the sprinkling of men who came from beyond the Tweed by their—he was almost going to say by their works, but, unfortunately, as they came to a land where brick was of paramount importance, and the building by-laws seemed to be enacted for the express purpose of stultifying any capacity which a Scotsman had got, it would require a century or two to get over these difficulties, and so their work was not what it might be. His experience of the Association had been a very pleasing and a very nice one, and he was quite sure that all those men who were coming into its ranks, from whatever end of the world they might come—all those men who came to better themselves and to learn what they could—would find in the Association all the facilities and all the attractions they required, and would probably form friendships and acquaintanceships which would be of great use and good to them at the time and of great value to them in after life. The Association took one out of oneself, gave one a chance of knowing other men, and of realising that there were other aims and objects in life than their own, and so broadened the sympathy of a man in his outlook upon the world and on work. On that account, and for other reasons, he thought they ought to think well of the Association and wish it every prosperity in its new home. He was delighted to think that the Association's recent move had at last awakened the Institute and had filled them with feelings that would inspire them to obtain something better than two lavatory basins.

With the toast was coupled the name of the Chairman, which was received with musical honours.

The Chairman, in response, said he thought they must congratulate themselves on the result, so far, of their new departure. They had many very good friends to thank for what had been done. In the first place they must not forget the very important work which was done by his predecessor, Mr. W. H. Seth-Smith, for it was largely due to that gentleman's energy and initiative that the Association was in a financial position to avail itself of the offer which was made by the Council of the Royal Architectural Museum through Mr. Maurice B. Adams. If they had not had the funds which Mr. Seth-Smith's energy had supplied them with they would, he was afraid, have been obliged to decline the offer. The best thanks of the Association were also due to Mr. Maurice B. Adams for the part he took in bringing the matter to a head and also to Mr. Leonard Stokes for the manner in which he had rendered the premises suitable to the needs of the Association. Most of the older members had studied at one time or other at the Royal Architectural Museum, and those who had done so would remember the dismal and depressing place it was. So much was this the case that if they had not possessed a considerable amount of enthusiasm they could not have gone there to work; but, under Mr. Stokes's guidance, that effect had quite passed away and the place was totally different, and, instead of having a depressing effect on students, it would have quite the contrary effect and the place would be a distinct encouragement to study, as it ought to be. Although they had entered into possession of these premises, and were very happy in having done so, there was an unhappy fact to be remembered—they were under a considerable burden of debt. He did not want to enlarge on this, because he had spoken about it so often lately, but he hoped that every member would feel that he had a part in what had been done and that he shared in the responsibility; if every member felt that, and acted accordingly, there would be no debt at all. The Association was going stronger than ever, and that dinner was a record one in regard to numbers and enthusiasm. The scope of the work of the Association was constantly enlarging, and they were continually embracing more and more of the profession. They had now a large number amongst their members of the most prominent architects, and many of them took an active part in the direction of the Association. The present position of the Association gave the greatest promise for the future, and he thought that their work would develop into something much more important than it had ever been before, and would have the greatest influence on architects and architecture of the future. The day school was an unqualified success, and the work done there gave promise that the students who passed through the course of training would give proof of much greater ability and more complete equipment than had been the case with students in the past. He looked forward to the time when the school would become one of the most important schools in England, and he had every confidence in thinking that the success of the Association was permanently assured.

Mr. Arthur Bolton then proposed "The Visitors," and, in doing so, referred to the presence that evening of Mr. Sudsuki, from Japan. Mr. Sudsuki seemed to him to embody just those qualities which had made Japan so successful. He had devoted more attention to the day school than any visitor during the two years that he (the speaker) had managed the school, and he was most persistent in his inquiries. The attention Mr. Sudsuki gave to the methods they were following seemed to be the same that Japan as a nation gave to naval and military affairs. As the day school had been mentioned that evening he might say that he looked back with amazement to his activity during the time when he was in charge of it. Up to that time he had never conducted a class or taught anything at all, but the Committee were pleased to think that he would be able to start it. He was not sorry that it was no longer his duty to lecture twice a week, for he found it sufficiently hard work, though it evidently did not injuriously affect Mr. Maule, who seemed, in fact, to flourish upon it. There were several members of the day school present that evening, and the Committee was glad to see students who had just joined the Association taking part in an event like the annual dinner. It was a good thing for the students to get to know the older members of the Association, for it would add to their interest in what was being done. The new premises would be an enormous impetus to the work of the school; when parents and guardians went to Tufton-street and saw the students at work in their present premises they would think that they could not do better than send their boys there. With the toast he coupled the name of Professor Hulme, one of the lecturers. The debt the Association owed to their lecturers and instructors was very great. All the work of the teachers of the Association could not be reckoned in the actual salaries they received, for he knew that they gave their ungrudging attention and did all they could for the students. Among the staff of teachers he might mention Messrs. Lewis, Green, and Jenkins, of the evening school, and Messrs. Squire, Dods, and Douglass of the day school, and, of course, Mr. Maule, the master. The work of the A. A. staff could not be too highly appreciated. He had not a long list of visitors to propose as the toast, but he was glad that they had so many architects and architectural students among them that evening. As long as the Association continued to command the confidence of the profession it would do well, whatever it took in hand.

Mr. Sudsuki briefly thanked the Association for the facilities which had been accorded him in his work, and said he was very grateful to the teachers and others. Japan needed improvement in many things, and he believed that many of his architectural friends would come to England to be taught, just as the navy of his country had been taught. He congratulated the Association on its prosperity and hoped it would be continued.

Professor Hulme having suitably responded,

Mr. H. P. G. Maule proposed the toast of "The Press." The Association was most indebted to the architectural Press, the standard of which went on rising year by year. The illustrations which appeared from week to week formed one of the chief means of studying contemporary work, and those illustrations went on improving, which no doubt affected and tended to improve draughtsmanship. There was a great gulf between the architectural and the non-architectural Press, which was very noticeable when the daily Press had to describe a famous public building. With the toast he coupled the names of our representative and Mr. Raffles Davison.

Our representative having responded,

Mr. Davison said that the Association embodied youth and the magnificent qualities of "youth, arrogance and insolence." As architects they should cultivate catholicity of mind and tolerance towards their *confrères*.

The proceedings terminated soon after.

THE ARCHITECTURAL ASSOCIATION SUMMER VISITS.—Our account of the first summer visit of the Architectural Association to Moor Park, Rickmansworth, is held over until next week.

BALTIMORE TIMBER TRADE.—According to a report received at the Foreign Office from the British Consul at Baltimore, there was a good demand throughout 1903 for all kinds of lumber, especially kiln-dried North Carolina pine and Georgia pine. Quartered oak, poplar, and other hardwoods were also sought, but the supply was not at all equal to the demand. The exports, principally to the United Kingdom, amounted to 58,346,000 ft., and were within 190,000 ft. of the quantity shipped in 1902.

THE SURVEYORS' INSTITUTION:

LONDON STREETS AND STREET TRAFFIC.

AN ordinary general meeting of the Surveyors' Institution was held on Monday at No. 12, Great George-street, Westminster, Mr. A. Buck, President, in the chair.

The minutes were read and confirmed, and Mr. Percivall Currey, Hon. Secretary, read a list of donations to the Library and the Library Fund.

On the motion of the Chairman, a vote of thanks was passed to the donors.

Mr. Currey also announced the result of the recent examinations.*

The scrutineers for the forthcoming election of officers having been appointed,

Mr. Howard Martin resumed the discussion on the paper recently read before the Institution by Mr. Thomas Blashill, entitled "London Streets and Street Traffic."† He gathered that on the whole Mr. Blashill was of opinion that the enormous expense of recent street improvements would, at any rate, delay others of a very ambitious kind. He (the speaker) was afraid that was true, but some of the schemes which Mr. Blashill mentioned might be usefully begun, if not completed. He supposed there could be no two opinions about the advantage of Colonel Hayward's scheme for a new street from Holborn Viaduct to Whitechapel-road, but he feared that the great expense would render that improvement impossible, at any rate in our time; but he thought that a great improvement would be the straightening and widening of Gresham-street. Cabmen insisted on using that road, and its widening would be very useful. As to the expense of improvements, he thought that local authorities, when getting their bills for street improvements through Parliament, might get a clause inserted by which all disputed cases of compensation should be settled by arbitration instead of by jury, for he thought that that would diminish the cost. He regretted that the coal and wine dues were abolished, for they provided a steady annual income, raised in a way which nobody felt, which provided for improvements; now the necessary money had to be provided in ways which were felt, and which operated oppressively. In speaking of the removal of obstacles, Mr. Blashill spoke about organisation of work done to the surface of the streets. He (the speaker) did not think it would be any improvement to entrust the whole of such work to the Borough Councils, because, so far as his observation went, the Borough Councils were the worst sinners themselves. It was not long since Fleet-street and the Strand were left in peaceful repose during the holidays when road work could have been undertaken at a minimum of inconvenience, and just at the end of the holidays, when the full tide of business was about to resume, the roads were taken up for repair, and the public were put to the maximum of inconvenience. It occurred to him that a single licensing authority might be appointed to whom applications should be made by those who wanted to remove the surface of the streets, and that authority should take pains to see that while the work was in progress any other work which was done periodically should be done at the same time. He thought that Mr. Blashill rather under-rated the practical efficacy of foot crossings by tunnels or bridges for relieving the congestion of traffic. Some of the worst congestion of traffic arose from stopping vehicles to allow people to get across, and there were few people who would not prefer to go down steps to a tunnel or up steps to a bridge, rather than wait while the traffic was stopped or run the risk of crossing while it was in motion. He thought we should gain enormously in the matter of reducing congestion of traffic, if tunnels or foot-bridges were provided. He did not think that there would be much relief by the use of motor carriages, and, as to police regulation, he did not think it would often be practicable to police-regulate the traffic to such an extent that quick traffic could be kept on certain streets, and slow traffic on others. He did not think the public would stand being so regulated. As to leaving vehicles beside the footways in front of trade premises, that was a very great obstruction to traffic and foot-passengers, but it was a practice that had continued for a long while, and if it were suddenly altered it would work a very great injustice to the owners of property, and would considerably diminish the ratable value of property and the incomes of the local authorities in consequence.

Mr. W. Woodward said that some of the improvements which had been carried out in London were very good, but they must all regret the Charing Cross-road improvement, because it did not lead in any direct way to the east, and was altogether a very unfortunate improvement. As to empowering the Borough Councils to do all work on the roadways, and to charge the cost to the parties concerned, he was surveyor to the Crown Estate Paving Commissioners, and in reference to Regent's Park, for thirty years at least it had been their practice to do such work through their contractors, the owners paying the cost. St. Pancras being a paving authority and also an electric light authority, the paving was done by them, but to the satisfaction of the Surveyor of the Commissioners. He did not see why that practice should not be extended. A great deal of obstruction and loss of time resulted from the want of supervision on the part of the engineers or surveyors who superintended the opening up of roads—workmen were allowed to congregate and talk and do the least work and take the longest time they could. As to the vexed question of paving roads, in the little district to which he had referred he had paved the roadway in the true macadam style. Instead of using large pieces of granite he did not use any that would not pass through an inch and a half sieve, nor did he mix it with sand or hoggin. The granite was put on the roadway and well watered and rolled, and in the end fine siftings of granite were put on. The result had been that his roadway, done in the true macadam style, had worn infinitely better than the roadways done in the style of the Borough Councils. As to shopkeepers projecting their counters, the Westminster City Council recently summoned a bookseller for projecting his stall on to the footway, but the most extraordinary thing was that theatres and music-halls were allowed to occupy the public way as they did by the visitors to their buildings. No sort of attempt was made to prevent such obstruction, and it was a monstrous thing that pedestrians should be forced into the roadway as they were when the remedy was so simple, *i.e.*, that the theatre owners should be made to open their buildings earlier, and pay for the necessary supervision. The Westminster City Council summoned a bookseller for his poor little 18 in. projection, and yet allowed yards and yards of human obstruction! As to the obstruction caused by vehicles, that again was almost entirely due to the absence of control on the part of the police. The police had immense powers over the traffic of London, but they did not exercise them. He agreed that the more we could minimise tramcars in London the better. As to the cost of improvements, he thought that a good many improvements were so costly because poor people were turned out of their homes long before the authorities were ready to undertake the improvement. This was certainly so in the case of the L.C.C. in Drury-lane and elsewhere. He thought that bridges might be advantageously placed in certain thoroughfares of London, and that they might be made architecturally picturesque; people would prefer to walk over a bridge than have to wait for the traffic in order to cross the road.

Professor Robinson said that in regard to the surface of roads, there was a great field open for improvements, and he believed that in the immediate future we should have some means of making the surface of our main roads sufficiently smooth to answer the purpose of motor traffic—not the motor traffic of the present, for that traffic was in its infancy now. By improved methods of traction, improved methods of storing energy, we should, with improved road surfaces, be able to substitute motor traction for horse traction in our main roads. There was reason to hope that in the near future the surface of roads would be greatly improved, and that we should get a road surface which would be more likely to serve the purposes of the future than the present scandalous methods. The present wood road was often a switchback, and, from the point of view of health, our present-day roads were, in dry weather, very unhealthy. Last year the rain, with all its inconvenience, produced an improved health rate, and medical men said that that was because the filth of the roads was not blown about and breathed by the people.

Mr. J. Douglass Mathews said that so many schemes for the improvement of the traffic of London had been suggested, and the expense of the improvements proposed was so enormous, that he was rather surprised that there had been no suggestion to remove London altogether and start afresh some thirty miles away. It might in 100 years time get a convenient city, but it would not be our interesting London. We must, as our forefathers had done, widen our streets as traffic increased. It was very nice to talk about streets 100 ft. wide running north, east, south, and west, but he was afraid that if they were provided the business of London would suffer, and that the cost would be very great. Such improvements meant money, which would have to be found by the ratepayers now that the coal dues were abolished. What we want is more direct streets. The old roads are the main roads of the present day, and, with few exceptions, they were well devised. If a little more care and attention were given to widening streets, great advantage would result at a comparatively small cost, for there was a great difference between widening a road and constructing a new one. By constructing new roads, a number of people were dispossessed, and it took a long time for a new street to become a well-used street. Kingsway will be a fine street, but what was going to be built on it he did not know. It was twenty-five years since he suggested a street from south to north over Southwark Bridge, and what he proposed was to take a spur from the crown of Southwark Bridge in a north-west direction by forming a viaduct over Thames-street, debouching at the corner into Queen Victoria-street, almost opposite to Bread-street—that would be almost a dead level. Then he proposed to widen Bread-street, Wood-street, which would lead into Fore-street, the street opposite which was Red Cross-street, which was a wide street, as also was Golden-lane, and in this way give a direct line to Old-street. Opposite Golden-lane was a narrow street called Central-street, which he believed was to be widened, and that would lead to City-road. If such a route were made it would afford a saving of more than a quarter of a mile over the present route. There were some small streets on the north side of City-road which could be widened at small cost, and, if this were done, a direct way would be opened up to Islington, opposite the Agricultural Hall. He also advocated a direct west to east street by a new street commencing at West Smithfield, south of St. Bartholomew's Church (which would be opened out), passing through some very small property to Aldersgate-street and continued on the opposite side of this street to Fore-street, opposite St. Giles's Church, by widening part of Jewin-crescent through Fore-street, would lead on to Moorgate-street. The widening of London Wall should be continued, and also Wormwood-street. Crossing Bishopsgate-street a short street should be formed opposite leading to Houndsditch, which would be widened as far as Aldgate. The traffic could then pass through the Minories and over the Tower Bridge away to the south east. The street would therefore give direct communication with Holborn Viaduct, crossing four great arteries to the new roads south of Tower Bridge. The traffic at the Mansion House was very much congested at all times of the day, and if these proposed roads were formed the traffic in the City would be greatly relieved.

Mr. W. Nisbet Blair, Engineer to St. Pancras Borough Council, said he was disposed to agree that to cut out new lines of thoroughfare was such a costly business that it would not often be done, and that widening improvements would be undertaken instead. It was said that tramways would do away with the 'buses, but the same argument was used in regard to the Central London Railway. As a fact, not only was that railway used to its utmost capacity, but he understood that there were now more 'buses in Oxford-street than ever before. A great deal had been said which reflected on the capacity of the local authorities in London, and he was prepared to combat that opinion. There were a great many subsidiary authorities with powers to break up the streets, and in the Borough of St. Pancras there were twelve authorities independent of each other with statutory powers to open a road. They had to give notice to the local authorities, but the Borough Council could not

* See our issue for the 7th inst., p. 491.
† See our issue for April 30, p. 462.

prohibit the opening of the streets; all they could do was to supervise the manner in which they should be opened. The subsidiary authorities carried on their work according to their own ideas. They were nominally controlled by the Borough Councils, but actually they were not. That was not the fault of the Borough Councils, but of the statutes under which the companies worked. It was true that roads might be opened for reconstruction at inconvenient times, but the time was not always within the absolute control of the Borough Councils. There were such things as hitches in the performance of a contract—material could not be delivered just as it was wanted, nor of the right quality. It had been within his experience that large consignments of wood blocks had to be condemned, and that involved delay. The time during which work might be executed varied with many things—the weather, for instance; and while it might be contended that works of repair should be executed more promptly, it must not be forgotten that Portland cement, which was a most valuable material for road foundations, required time for hardening, and if it were not allowed to dry and harden the great weight subsequently put upon it would cause it to crush up and the work would soon have to be done again. It was an economy of time to do the work thoroughly, but people seemed to think that the work was being neglected when the foundations were being left to dry and harden. He thoroughly agreed that obstructions ought to be removed from roadways. As to the obstruction caused on the footways and roadways by goods and salesmen, it was little good to take the offenders to the police courts if the magistrates did no more than fine them 5s. and 2s. costs. Such a fine was a very cheap rent. Other obstructions were the steam engines and heavy waggons, and these had lately been dealt with by the L.C.C., who had prepared two categories of streets along which at certain times of the day these vehicles were not to be allowed to pass. But the passage of these heavy vehicles caused such a vibration that they could not but have an injurious effect on house property. In his opinion such vehicles ought to be debarred rather than licensed. He hoped that the time would arrive when motor-cars would be able to use all parts of roads, and when such vehicles were in anything like a majority the streets would be paved with a material, such as asphalt, suitable for our streets. Wood pavement was suitable for horse traction, but of course it had objections from other points of view. Hard wood pavement was much more permanent, but it was more noisy; and he had not yet heard of any pavement which was ideal.

Mr. Blashill, in reply, said he was not so much inclined to divide slow traffic from quick traffic and put them in different streets; his opinion was that we should do away with slow traffic. People going through London ought not to go through at a foot pace when they could go at a quick pace, and we were coming to a time when it would be better, cheaper, and easier to take even the heaviest loads quickly rather than slowly. If true macadam roads were constructed, with small stones and without rubbish, a kind of mosaic was produced which made a splendid road. As to bridges over streets, he was alluding more to bridges for general traffic and not to foot-bridges so much. As to foot-bridges, if one watched such a place as the crossing at Queen-street and Cheapside, one would find that when the carriage traffic was ready to go east and west, the foot traffic was able to go, too. He still thought his idea of a tunnel from Southwark Bridge was worth consideration and something would have to be done sooner or later in connexion with the bridge. As to Portland cement, the weather certainly did affect it, but why should not some easily erected cover be put up over foundation work so as to keep off the rain? As to pavements, he believed we should have easily renewable pavements in time—those thin surfaces applied to the pavements about which he had always spoken. As to the idea about frequent trains of one or two carriages, he went to Exeter the other day in a very long train that did not stop between London and Exeter, and he could not see why it should not be possible to run that train in instalments, so to speak, and frequently, instead of in one long train and only once a day.

It was announced that the next meeting will be held in the Lecture Theatre of the Institute of Mining and Mechanical Engineers in Neville-street, Newcastle-on-Tyne, on the 26th inst., when the following papers will be read and discussed:—(1) "Newcastle in the Olden Time," illustrated by limelight views of the fortifications, public buildings, and other leading features of the town, by Mr. Richard Welford; (2) "The Rehousing of Displaced Populations," by Mr. Edgar J. Harper; (3) "Some thoughts on the Housing of the Working Classes," by Mr. Henry I. Potter, A.R.I.B.A. (of Sheffield); (4) "The Present position of the Law and Practice of Ancient Lights," by Mr. Philip E. Pilditch.

At the termination of the morning's proceedings, the members of the Northumberland and Durham and the Cumberland and Westmoreland Provincial Committees will entertain the visiting members at luncheon at the County Hotel, Neville-street. The members of the Institution will dine at the County Hotel on the evening of Thursday, May 26. The following day will be devoted to excursions.

MAGAZINES AND REVIEWS.

OWING to demands on our space, we must keep our notes on the contents of magazines more brief than usual.

The *Art Journal* contains an article by Mr. Arthur Sketchley on the Royal School of Art Needlework: and there is a short one on the Ruskin exhibition at Manchester, mentioning and describing some very interesting specimens of Ruskin's early drawing, as a child. Gainsborough's beautiful "Perdita" portrait is the subject of an article by Mr. Claude Phillips, and of the frontispiece to the number.

The *Magazine of Art* contains an appreciation of "some recent Glasgow painting"; one by Prince Karageorgevitch on Emile Gallé's glass work; one by Mr. A. B. Skinner on a stained glass window by Giugielmo de Marcilla, in the South Kensington Museum. Mr. Val Prinsep's recollections of "A student's life in Paris in 1859" are very interesting and amusing.

The *Architectural Record* (New York) devotes an article to "The Art of the High Building," many of the illustrations to which seem to show (as indeed the author appears inclined to admit) that any attempt at making artistic architecture out of these structures is being abandoned in despair. It is a pity, seeing the great opportunities which lofty buildings give for architectural effect; but they seem to be gradually coming to look like upright gridirons, all bars and interstices. "A Modern Classic" is the rather ostentatious title given to Messrs. McKim Mead and White's building for the Knickerbocker Trust, which is the subject of an illustrated article. If the term means only that it is in classic style, so it is; but if it is intended that the building is a "classic," in the sense of a model, in modern architecture, we must dissent, as we can see no architectural sense in putting up a Greek colonnaded temple with modern forms of partition and plate glass between the columns—it is both an æsthetic and historic incongruity.

The *Architektonische Rundschau* and the *Berliner Architektur-welt* do not present anything this month for special comment. In *Public Works* will be found descriptions of municipal St. Petersburg and municipal Stuttgart, and Mr. J. D. Watson commences a series of articles on "The Purification of Sewage." In the *World's Work* is an article by Mr. H. G. Archer on "Beautiful Railway Stations," written in a right spirit, in regard to the architectural possibilities of railway stations and the way they are neglected in London; but he does not seem to be aware that King's Cross, plain as it is, is really a very good design; and when he tells us that for the new front of Victoria Station engineer and architect are working together to produce a fine result, we can only say that we have never been able to learn the name of the architect, and we fear that it is a case like that of the Tower Bridge; the engineer to the work has engaged an architectural draughtsman. We should be glad to hear otherwise, but we know that efforts have been made to persuade the Company to employ an eminent architect for the station front, and without any avail so far. Mr. Archer mentions, what we were not aware of before, that it was first intended to carry out the whole of Euston Station in accordance with the massive and Greek character of the still existing portico, but that the Directors had to abandon the idea in deference to the economic outcries of the shareholders. How like England!

The *Burlington Magazine* contains an article on the late Mr. J. S. Forbes's Millet drawings, which has the merit of being accompanied by very numerous illustrations of the drawings. "Italian Boxwood figures of the early XVIIth century," by Dr. Wilhelm Bode, is another subject of special interest, and also well illustrated.

In the *Antiquary* Mr. J. P. Arthur concludes his essay on "Neolithic and other remains near Harlyn," and Mr. William Andrews contributes a paper on the picturesque subject of "Funeral Garlands."

In *Technics* Mr. E. Fiander Etchells continues his series of articles on the "Theory of Structural Design," considering the bending moments and shearing forces in rolled steel joints supported at the ends or inserted in the side walls of a building. He properly points out that, while it is proved in text-books that if both ends are firmly fixed a beam will bear 50 per cent. greater load than a beam merely supported at the ends, the condition of fixity is so incompletely attained in floor joists that their increased load capacity is not usually more than 5 or 6 per cent. Mr. Henry Jarvis makes a further contribution on "Planning, Setting out, and Making Staircases," describing and illustrating the mode of procedure to be followed in setting out and making a straight flight of stairs. Two of the most instructive articles in this issue are the "Micro-Structure of Metals," by Mr. Percy Longmuir, and "The Estimation of Carbon in Iron Carbon Alloys," by Dr. H. C. H. Carpenter. In the former, Mr. Longmuir points out that the material benefits of microscopical examination are exceedingly promising, and that the results already obtained offer much information of direct practical value. This article includes a number of figures illustrating the structure of various metals, and showing that the properties of a metal depend not so much on the amount of each constituent present, as on the particular distribution of the constituents in compound form through the mass. Microscopic examination affords the means for studying this structural distribution, thereby affording trustworthy guidance towards fuller knowledge of metals and alloys. In the latter article, Dr. Carpenter briefly attempts to guage the limits of accuracy of the most trustworthy methods of estimating the various forms of carbon in the commercial alloys of iron and carbon; the varieties of carbon considered being "graphite," "temper," "carbide," and "hardening" carbon. Among other articles may be mentioned "Some Experiments on an Air-Cooled Petrol Motor," by Professor H. L. Callender; "The Continuous-Current Dynamo," by Mr. H. M. Hobart, dealing with the important question of insulation of the windings, and illustrated by numerous diagrams; "The Education of Electrical Engineers in London," by Professor J. A. Fleming, in which the writer briefly describes the work of the principal polytechnics and technical institutions in the metropolis, pointing out defects in our present system, and the need for further concentration of effort; and an illustrated article by Mr. F. H. Davis on "Surface Contact Systems of Electrical Traction."

In the *Nineteenth Century* Sir Michael Foster writes on the subject of "The State and Scientific Research," suggesting a method by which we might have the advantage of State-aided research without what have been believed to be its inevitable disadvantages. His plan is that the State, instead of providing its own laboratories and scientific staff occupied with the work of the State and with nothing else, should contribute to the maintenance of laboratories and scientific staffs, for pathological research, in connexion with Universities and other bodies in different parts of the country. Investigations carried out in this manner by the State would, he thinks, be quickened and kept straight by being always in touch with scientific work not directly belonging to the State. That is to say, the University laboratory would get the advantage of State aid, while the scientific inquirer would be free, and not hampered by officialism. The merits and advantages proposed to be obtained by endowment of research on this principle are discussed at considerable length.

In the *Cornhill Magazine* there is a very interesting article on "Modern Theories of Light," by Mr. W. A. Shenstone. He states that modern discoveries, such as the "Zeeman effect," "Becquerel rays," and "Electrons," are not so revolutionary as they may at first

sight appear to the untrained scientist. J. J. Thomson's discoveries have upset neither the undulatory theory of light as established by Fresnel and Young, nor the electro-magnetic theory enunciated by Maxwell and partly proved by Hertz. Mr. Shenstone attempts to show that there has been nothing but orderly progress. With due respect to the author, however, we are inclined to an exactly opposite view. We consider that the theory of ions has completely upset all the orthodox scientific theories of last century, and in our opinion the undulatory theory of light has to be very considerably modified. We agree with the author, however, in thinking that until we know more about the constitution of the ether it is unwise to lay too great stress on any theory.

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A YORKSHIRE district meeting of the members of the Association of Municipal and County Engineers was held at York on Saturday, May 14. The interest generally evinced in the work which Mr. Creer has carried out at York in the bacterial treatment of sewage brought together a large gathering of members. The President (Mr. W. Weaver, C.E., Kensington), presided, and among those present were Messrs. A. Creer, York; J. T. Eayrs, Birmingham; J. Cartwright, Bury; A. M. Fowler, Manchester; J. Lobley, Hanley; A. D. Greatorex, West Bromwich; F. S. Yates, Waterloo; C. Brownridge, Birkenhead; T. W. Spencer, Tynemouth; W. H. Hopkinson, Keighley; C. F. Wike, Sheffield; R. C. Mawson, Evesham, and others.

The Lord Mayor heartily welcomed the Association to York, and said the one thing they boasted of was their drainage scheme. That had cost them something like a quarter of a million of money. It was one of the difficulties that municipal authorities had to contend with, and one that was always opening out fresh fields of opportunity for engineering skill.

The President said they would be much interested in viewing the sewage works and in listening to Mr. Creer's paper. Knowing the great skill and care which he bestowed on the work committed to his charge, they were quite sure they would derive from their visit great satisfaction and much useful experience.

On the proposition of Mr. Creer, York, seconded by Mr. Cartwright, Bury, Mr. W. H. Hopkinson, Keighley, was re-elected honorary secretary for the Yorkshire district.

Sewage Disposal at York.

Mr. A Creer, City Engineer, read a paper on sewage disposal at York. He said sewage disposal is the most interesting, and certainly one of the most absorbing problems that municipal engineers have to consider. It is being studied with care and attention by a number of earnest workers, through whose labours our knowledge on this subject is fast increasing. It is this general interest that promises so well for the future, and led the writer to think that the time is very near when this difficult and complex problem, that has already cost this country many millions of money, may be solved on scientific principles, and when the designing and working of a sewage disposal works may present none of those uncertainties, both in results, and in the approval of the Local Government Board, that now trouble the souls of the great majority of municipalities and their officials.

Various standards of purification, or rather of impurity, have been sanctioned provisionally by river's boards and county councils, and tacitly acquiesced in by the Local Government Board. In this district it had been fixed at one grain of oxygen absorbed per gallon, and one-tenth of a grain of albuminoid ammonia per gallon. These varying standards have obviously been fixed by the various rivers' boards and county councils to suit the different conditions that obtain in their respective districts. In the writer's opinion no standard can be a fair and equitable one, if fixed arbitrarily and without any reference to local conditions, and to the proportion the volume of effluent bears to the volume of the stream or river into which the effluent discharges. It is obviously unfair to fix upon the same standard for an effluent discharging into a river with a minimum flow of fifty volumes of effluent, as for an effluent which forms in itself the bulk of the volume of the stream into which it is discharged. In the latter case a non-putrescible effluent should be insisted upon, but surely in the former some latitude should be allowed. If it is allowable to run crude sewage into a tidal river it should surely be allowable to discharge an effluent purified to a limited extent into a river of a greater volume than many a tidal river.

What the results of the labour of the Royal Commission on sewage disposal may be it is difficult to forecast. We must possess our souls in patience, and hope that it may be a rational solution of the problem, moderate and reasonable in its requirements, and with a certain amount of elasticity in its working that will commend it to the majority of municipalities.

Many towns have, during the past twenty years, spent vast sums of money on works for the chemical precipitation of sewage and its attendant evils of sludge pressing and disposal of cake; they are now in the position of having to begin practically over again, and incur additional debt before the loans for the first expenditure are liquidated. This is a matter of very serious moment, and one that should be very seriously considered by the Local Government Board when laying down hard and fast lines for municipalities to follow.

He had in mind a certain place in Yorkshire where the sewage purification problem has been shelved from time to time by the authority; they are now in much the same position as they were thirty years ago; they have incurred little or no expenditure on works, and are now in that happy position of knowing that their policy of letting things slide has resulted in the saving of large sums of money; while those municipalities who have honestly tried to deal with the problem, regardless of cost are in the unfortunate position of seeing their works practically condemned, and, looming in the future, further large expenditure on works that may turn out to be as futile and unsatisfactory as those they had but a few years before carried out under pressure.

It is this uncertainty that the Royal Commission should end. Works carried out with the approval of the Local Government Board, on the lines laid down by them, should, if carried out, suffice at least for a period sufficient to enable the authority to pay off the debt incurred in their construction.

The sewerage scheme at work was designed and carried out by Mr. James Mansergh. The works were commenced in 1890, and with the exception of the house connexions were completed in 1894. The actual cost of the scheme was 207,851*l*. The system for which the works were designed was milk of lime treatment, followed by a solution of aluminoferric. The sewage is naturally alkaline.

The total average quantity lifted per annum (over seven years) has been 1,730,000,000 gallons—viz., 1,239,000,000 gallons a maximum lift of 33 ft. increased by friction to about 47 ft., and 491,000,000 gallons a lift of about 16 ft.; in the latter case the pumps not infrequently discharge against a head of water in the river. The average daily flow at the pumping station over this period is 4,739,000 gallons; the average cost of lifting the 1,730,000,000 gallons has been 20s. 1·30d. per million gallons.

The annual cost of precipitation and pressing during the same peirod has averaged 2*l*. 4s. 11d. per million gallons treated at the works.

From February to December, 1896, the sewage was chemically treated with lime and aluminoferric, the quantity used varying with the quantity of sewage delivered at the works and to some extent with its strength; the average was about five grains per gallon of lime and of five grains per gallon of aluminoferric. During this period eleven analyses of the sewage effluent were made. The purification worked out at 67·8 per cent. for oxygen and 76 per cent. albuminoid ammonia. As the sewage was naturally alkaline, and complaints were made as to the action of lime on the fish in the river, its use as a precipitant was discontinued for a certain period, and the sewage treated by aluminoferric only, the average quantity used being six grains per gallon. From December, 1896, to December, 1897, twelve analyses were made of the sewage and effluent. The purification worked out at 70 per cent. oxygen absorbed and 78 per cent. albuminoid ammonia. A curious feature in the case was that during the whole of these periods samples of the river water were taken and analysed at the same time as the sewage, one from half a mile above the outlet from the disposal works and one from half a mile below. The results showed an average of 25·8 oxygen absorbed in the twenty-three samples above the outlet and an average of ·270 oxygen absorbed below the works. On ten occasions the river below the outlet was better than that above, and on the remaining thirteen occasions worse. In consequence of a number of dead fish being found in the river strong complaints were made by the fishery board, and the West Riding Rivers Board; and with the view of ascertaining if they could in any way improve the effluent the Corporation empowered the writer to experiment in bacteriological and other methods of sewage purification.

Five sets of experiments were made—covered septic tank and single contact, crude sewage and double contact beds, ladder filter—crude sewage and multiple contact—open septic tank and continuous filtration, and open septic tank effluent and double contact; all these had been discontinued with the exception of the open septic tank and continuous filtration, which had been continued with the construction of a grit chamber at the entrance to the open septic tank. This filter has, up to the end of March, been at work for three years and nine months; it was built on economical lines, the walls of common local bricks and the filtering medium of a very poor description. It has nevertheless done excellent work during this period in having passed 209,808,000 gallons of sewage, and, along with the septic tank, effected such a purification that on leaving the filter it contains only half the impurity allowed by the West Riding Rivers Board, and is absolutely non-putrescible. From May 7 to August 1, 1902, 2 ft. 6 in. of sediment had accumulated in the grit chamber. There was at the latter date an entire absence of scum both on the grit chamber and on the open septic tank. The average depth of sludge in the bottom of the open septic tank was 3 in. The grit was cleaned out for the first time on September 4. At this date a 2-in. scum covered the surface of both the grit chamber and the open septic tank. The depth of sludge was 4 ft. 10 in., and occupied about 2,000 cubic feet of the chamber. As 21½ million gallons of sewage had passage through this would be equal to one cubic yard to 290,000 gallons of sewage. Of course it would be understood that this sludge was not all mineral matter.

From observation since made the writer has come to the conclusion that, under the circumstances that obtain in this experiment, the chamber should be cleaned out once in every two or three weeks. The very satisfactory results obtained from the open septic tank and continuous filter induced the Sewerage Committee to construct a second continuous filter on somewhat similar lines, endeavouring in the new work to ascertain what kind of filtering media would give the best results. This filter is filled with four different classes of material—viz., clinker, hard broken bricks, honeycomb slag, and gas coke. These were filled in separately, and form four distinct vertical sections in the filter; the cubic contents of each section of the filter is as follows: 1,324 cubic yards clinker, 277 cubic yards hard broken bricks, 166 cubic yards honeycomb slag, and 166 cubic yards gas coke.

It is rather early yet to state definitely which material will ultimately prove most efficient. This filter was started on April 29, 1903, and up to February 23 had passed on the average 362 gallons per square yard per twenty-four hours, or 1,752,000 gallons per acre per day. With reference to the septic tanks he said two tanks, each 164 ft. long by 40 ft. wide, have been used as open septic tanks, the flow from the first passing through the second; the velocity of the flow for some days before and after the observations was ·28 ft. per minute, or 16¾ ft. per hour, and the quantity passing 628,000 gallons per twenty four hours. It is evident that this tank does something more than liquefy the organic solids, as the sewage on this occasion was purified during its progress through the tank to the extent of about 50 per cent, both in oxygen absorbed and albuminoid, and it is evident that this improvement is not confined to the later period of its flow through the tank, as the percentage of purification is greatest in the first 18 ft. of flow, gradually diminishing as it proceeds until it reaches a point when a further flow of 100 ft. fails to effect any further improvement in the sewage. The inference is that both anaerobic and aerobic bacteria are working throughout the whole effective length of the tank, and that when a certain stage of purification has been reached, a different process is required to carry on the work. The action on the suspended solids is very interesting. Of the total quantity entering the tank with the sewage, 75 per cent.

was organic and 25 per cent. mineral. On leaving the tank the suspended solids have been reduced to 58 per cent.; and this was composed of 73 per cent. of organic suspended matter, and 27 per cent. mineral; this approximates very closely to the proportions in the raw sewage.

A large number of observations have been taken of the temperature of the sewage, filter bed, filtrate, and atmosphere during the past three years. Shortly, the results are as follows: In the winter the sewage averaged 8 deg. above the atmosphere, the filtrate 3 deg. below the sewage. The filter itself averaged from 2 deg. below the sewage to 1 deg. above, the lower temperature being in that part of the filter nearest to the outside wall. There can be little doubt that this form of filter wholly above ground lends itself admirably to thorough aeration. Observations have been taken at the openings in the pigeon-hole wall at the termination of the perforated pipes by means of an anemometer; the results show that notwithstanding the numerous openings for the admission of air into the filter, the velocity on the windward side varied from 350 ft. to 1,050 ft. per minute; while on the lee side it varied from 550 ft. to 1,240 ft. per minute from the filter, sufficient to satisfy the most voracious microbe.

Mr. J. T. Eayrs, Birmingham, said it was obviously a fallacy to insist upon a certain percentage of purification, as the effluent of the sewage of a large town with 90 per cent. of purification, might be worse than the crude sewage of a small town. When he visited the sewage works at York some time ago, he was surprised at the large takes of fish by fishermen quite close to the outfall of the sewage works. Another remarkable fact was that the quality of the water in the river was practically the same below the sewage outfall, and after it had passed through the City, as the water taken from the river on the other side of the City.

Mr. A. M. Fowler, Manchester, said that in towns of a similar character to York, where there were few manufactories, the bacterial system was a great success. But to apply this system to manufacturing towns it was necessary to have all the facts with respect to the trade effluents.

Mr. Spencer, Tynemouth, speaking from experience of sewage outfall works into tidal rivers and the sea, said it was a question whether it would not be to the benefit of the community to have some treatment of the sewage which was discharged into tidal rivers and into the sea, instead of discharging the crude sewage.

Mr. A. D. Greatorex, West Bromwich, contended that the volume of effluent to the volume of the stream into which it was discharged must have an important bearing upon the standard of purification.

Dr. Wilson, Chief Inspector to the West Riding Rivers Board, agreed with Mr. Creer that an arbitrary chemical standard of sewage purification was not to be advocated. It would be absurd to fix the same standard for an effluent discharged into a navigable river like the Ouse, and an effluent discharged into a small stream which might afterwards be used for drinking purposes. The action taken by the Rivers Board was with reference to a chemical effluent, which underwent reaction and deterioration after discharge into the river, whereas a bacterial effluent improved after its discharge.

Mr. C. F. Wike, Sheffield, and Mr. Hirst having taken part in the discussion, a hearty vote of thanks was accorded to Mr. Creer for his paper.

The Sewerage Committee entertained the President and members to luncheon in the Guildhall, and in the afternoon the members visited the sewage disposal works, proceeding there by steamer.

THE SLATE TRADE.—In the paragraph on the slate trade in our last issue the word Crown has been taken as brown. The co-operators are negotiating for quarries on Crown land.

CO-OPERATIVE BRANCH STORES, FERRYHILL, NORTHUMBERLAND.—New branch stores have been erected at Ferryhill village for the Coxhoe and Cornforth Co-operative Society. The architect was Mr. R. Sandeson, Coxhoe, and the builders Messrs. Makepeace and Valks, Trimdon, the heating apparatus being supplied by Messrs. Dinning and Cook, Newcastle. The cost of the work has been about 1,500*l.*

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring Gardens, S.W., Mr. J. Williams Benn, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend Hampstead Borough Council 9,477*l.* for paving works; Guardians of Wandsworth Union, 21,100*l.* for poor law purposes; and Woolwich Borough Council 1,135*l.* for site for extension of depot. Sanction was also given to borrowing as follows:—Wandsworth Borough Council, for various purposes, and Woolwich Borough Council 1,100*l.* for assisted wiring of consumers' premises for electric lighting, etc.

Locomotives on Highways.—The adjourned report of the Public Control Committee was submitted, recommending a series of by-laws with regard to the use of locomotives in London. It was suggested that certain streets should be scheduled in which locomotives should be prohibited during certain hours.

Mr. Beachcroft complained that the use of these heavy traction engines in the streets made life a burden to many people, and the foundations of their houses insecure. He moved an amendment to the effect that the Local Government Board be asked to institute a public inquiry into the use of such locomotives, and that it be referred back to the committee for the purpose of approaching the Local Government Board.

Mr. Sidney Low, in seconding the amendment, said mechanical traction in the streets had come to stay, and it was for them to consider how it could best be adapted for the public advantage. He believed that mechanical science and ingenuity were not exhausted, and that it was possible to design a traction engine of great power, noiseless, emitting no smoke, and not unduly heavy. By passing those by-laws, however, they would stereotype the existing kind of locomotive.

After considerable discussion, Mr. Beachcroft modified his amendment so as to read that the report be referred back for further consideration, and in this form it was carried.

Shoreditch Technical Institute.—The Education Committee recommended, and it was agreed, that the estimate of 5,490*l.* submitted by the Finance Committee be approved; that expenditure not exceeding that amount be sanctioned in connexion with the erection of new buildings at the L.C.C. Shoreditch Technical Institute; that the work be carried out by the Council without the intervention of a contractor; and that the plans, specification, and architect's estimate of 5,040*l.* be referred to the Works Committee for that purpose.

Improvements.—The Improvement Committee recommended, and it was agreed, that the estimate of 25,000*l.*, submitted by the Finance Committee, be approved; and that expenditure on capital account not exceeding that amount be authorised in respect of works in connexion with the widening of Brook Green-road and Scrubs-lane, authorised by the London County Council (Tramways and Improvements) Act, 1903.

Haymarket Theatre.—Plans for the improvement of Haymarket Theatre, submitted by Mr. C. S. Peach, were agreed to on certain conditions.

Tramway Works, etc.—The Highways Committee recommended, and it was agreed:—

"That expenditure, on capital account, of sums not exceeding 22,190*l.* in all, be authorised, in respect of (i) the erection of the superstructure of the Camberwell car-sheds and workshops, required in connexion with the electrical working of portions of the London County Council Tramways, and (ii) the execution of the granite paving works, the laying of rails, and the construction of conduits in, and in connexion with, the car-sheds.

"That the erection of the car-sheds and workshops at Camberwell, referred to in the foregoing resolution, be carried out without the intervention of a contractor; and that the drawings, specification, and estimate of 19,000*l.* be accordingly referred to the Works Committee for that purpose.

"That the Highways Committee be authorised to arrange for the execution of the granite paving works, the laying of the rails, and the construction of the conduits necessary in, and in connexion with, the Camberwell car-sheds, to be carried out by the Council's tramways permanent-way staff.

"That the supplemental estimate of 4,500*l.*, submitted by the Finance Committee, be approved; and that expenditure, on capital account, of sums not exceeding that amount in all be sanctioned, in connexion with the roadwork and plate-laying portion of the reconstruction of the Tooting to Westminster, etc., sections of the London County Council Tramways.

"That the supplemental estimate of 900*l.*, submitted by the Finance Committee, be approved; and that expenditure of sums not exceeding that amount in all be sanctioned, in connexion with the provision of a temporary station at Deptford, for the electrical working of portions of the London County Council Tramways.

"That the estimate of 1,500*l.*, submitted by the Finance Committee, be approved; and that expenditure, on capital account, of sums not exceeding that amount in all, be sanctioned in connexion with the preparation of plans, and the making of surveys, etc., for the erection of the car-sheds and sub-stations required for the electrical working of the first sections (about 22½ miles of single line) of the Council's (Northern) Tramways."

Housing.—The Housing of the Working Classes Committee recommended, and it was agreed:—

"That application be made to the Secretary of State for the Home Department for an order permitting a modification of the London (Aylesbury-place, Clerkenwell, and Union-buildings, Holborn) Improvement Scheme, 1899, so as to provide for (*a*) the inclusion in the scheme of so much of the site of Mallory-buildings as is surplus land acquired in connexion with the St. John-street improvement; (*b*) the reduction of the accommodation to be provided on the Aylesbury-place area for 200 persons to that for 164 persons; and (*c*) the increase of the accommodation to be provided on the Union-buildings area for 1,200 persons to that for 1,236 persons, or such other numbers as the buildings will accommodate.

"That Messrs. W. Smith and Son be allowed to sublet to Messrs. John Williams and Co. the slating work under their contract for the erection of Barnaby-buildings, Leroy-street, Bermondsey; that the solicitor do prepare the agreement prescribed by the Council's standing order relative to sub-letting.

"That the Haslemere Builders, Limited, be allowed to sublet, to Messrs. Roberts, Adlard, and Co., the slating work under their contract for the erection of Wenlake-buildings, Roby-street, St. Luke; that the solicitor do prepare the agreement prescribed by the Council's standing order relative to sub-letting."

The Mansion at Avery Hill.—The Parks Committee recommended:—"That the resolution of the Council of May 5, 1903, directing that, until otherwise ordered, a part of the mansion and gardens at Avery Hill be used as a convalescent home be rescinded, and that it be referred to the committee to consider and report what should be done with the mansion at Avery Hill."

Mr. Piggott said this property cost 280,000*l.*, and the house itself, which was a modern building of the best work, cost 153,000*l.* He suggested that it might be utilised for clerical work, or for a teachers' centre, or something of that kind.

Captain Swinton agreed to add to the recommendation the words, "and confer with the Establishment Committee," and, as amended, it was carried.

The Council shortly after adjourned until June 14.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Paddington, South.—An oriel window in front of No. 12, Stanhope-place, Hyde-park, Paddington (Mr. J. Darch for Mr. M. Epstein).—Consent.

Bermondsey.—A one-story shop in front of No. 254, Southwark-park-road, Bermondsey (Mr. J. Dumphreys for Messrs. Pearks, Gunston, and Tee, Ltd.).—Consent.

Dulwich.—Buildings with bay windows and one-story shops, on a site abutting upon the west side of Peckham-rye and south side of East Dulwich-road (Mr. A. Keen for Mr. H. Line).—Consent.

Whitechapel.—The retention of a projecting sign at No. 86A, Brick-lane, Whitechapel (Mr. B. Schewzik).—Refused.

Width of Way.

Bethnal-green, North-east.—A building upon a site abutting upon the north side of Bullard's-place, and west side of Warley-street, Bethnal-green, with external walls at less than the prescribed distance from the centre of the roadway of Bullard's-place (Mr. W. B. Medlicott for Rev. G. K. S. Marshall).—Consent.

Hackney, North.—A one-story shop on the forecourt of No. 37, Church-street, Stoke Newington (Mr. W. Whincop for Mr. E. Fenn).—Consent.

Bow and Bromley.—A two-story building on the forecourt of No. 416, Old Ford-road, Bow (Mr. J. E. Brook for Mr. O. Shannon).—Refused.

Width of Way and Lines of Frontage.

Brixton.—A building with a one-story addition in front on the site of Nos. 242 to 258 (even numbers only), inclusive, Ferndale-road, Brixton, to abut also upon Stockwell-avenue (Mr. J. W. Chapman for the Bon Marché, Ltd.).—Refused.

Strand.—The re-erection of Nos. 17, 18, 19, 20 and 21, Tavistock-street, Covent-garden (Mr. E. L. Lutyens for Sir G. Newnes, Bart.).—Refused.

Line of Frontage and Space at Rear.

Westminster.—An addition in front of No. 276, Vauxhall-bridge-road, Westminster (Messrs. Essex and Co., Ltd.).—Refused.

Space at Rear.

Lewisham.—A modification of the provisions of section 41 of the Act, so far as relates to the proposed erection of a building upon a site abutting on the south side of London-road and west side of Dartmouth-road, Lewisham, with an irregular open space at the rear (Messrs. Tolley and Son for the London and South-Western Bank, Ltd.).—Consent.

Formation of Streets.

Battersea.—That an order be issued to Mr. W. M. Wilkins sanctioning the formation or laying out of a new street, for foot traffic only, to lead from Town-hall-road northward to Theatre-street, Battersea (for the Metropolitan Borough of Battersea).—Consent.

Greenwich.—That an order be issued to Mr. W. J. Kemp sanctioning the formation or laying out of new streets for carriage traffic upon the Page estate, Vanburgh-fields, Greenwich, to lead out of the south side of Westcombe-park-road and eastern side of Park-wall (for Mr. C. H. Polhill).—Consent.

Wandsworth.†—A deviation from the plans sanctioned for the formation or laying out of new streets for carriage traffic upon the Totterdown-fields estate, Upper Tooting-road, Wandsworth, so far as relates to an alteration in the formation of the new streets southward of Franciscan-road and the omission of the southernmost new street running parallel with Church-lane (Mr. R. Robertson for the Housing Committee of the Council).—Consent.

Wandsworth.—That an order be issued to Mr. R. C. Overton refusing to sanction the formation or laying out of new streets for carriage traffic, and of a street for foot traffic only, on a site on the south side of Lower Richmond-road, eastward of River-street, Wandsworth (for Mr. R. Emerson).—Refused.

The recommendations marked † are contrary to the views of the local authority.

ARCHITECTURAL SOCIETIES.

NORTHERN ARCHITECTURAL ASSOCIATION.—An excursion meeting in connexion with the Northern Architectural Association was held on Saturday last week, when the party first visited Mr. Milburn's block of new buildings in Dean-street, over which they were conducted by Mr. Wood, of the firm of Messrs. Oliver, Leeson, and Wood. An interesting tour was made through the buildings, which, it was stated, will cost over 100,000*l.*, and it is arranged that the members will pay a second visit when the structure is nearer completion. Afterwards the party paid a visit to the Laing Art Gallery in New Bridge-street, which, it is expected, will be completed in less than two months' time. This was the second visit of the members of the Association to the Gallery, and through the kindness of Messrs. Cackett and Dick, together with the clerk of the works, Mr. Thomas Marriner, they were enabled to see it in its present advanced stage of completion to advantage. During the afternoon Mr. F. W. Rich was re-elected a member, and the following gentlemen were nominated:—Members: Mr. Charles Frederick Newcombe, Newcastle; Mr. Charles E. Oliver, Newcastle; Mr. Harold Oswald, Newcastle; Mr. C. J. Pringle, Newcastle; Mr. E. A. Whipham, Stockton; and Mr. G. T. Wilson, Blackhill. Associates: Mr. R. P. Blakey, Sunderland; Mr. H. S. Dixon, North Shields; Mr. Stanley M. Fill, Rowland's Gill; Mr. G. N. Limpricht, Newcastle; Mr. C. W. Milburn, Newcastle; Mr. W. Shanks, Newcastle; and Mr. G. S. Twizell, Newcastle. Students: Mr. G. E. Gibson, Newcastle; and Mr. J. B. Richardson, Shotley Bridge.

LEICESTER SOCIETY OF ARCHITECTS.—We have received the thirty-first Annual Report of the Leicester and Leicestershire Society of Architects, a pamphlet got up in an excellent manner, forming an admirable specimen of paper and typography. The number of members is now 111, an increase of five since the last report. There is nothing in the report itself that we need specially comment on, but we may notice that it is accompanied by two or three sheets of careful and highly finished measured drawings and details of old houses in Leicester, and of the screen in St. Mary's, Leicester; an interesting and valuable addition to a report of this kind.

NEW SCHOOL, STRATFORD.—The opening of the new Council school in Holborn-road, Stratford, took place recently. The building affords accommodation for 1,600 children. Mr. Jacques is the architect.

HE SANITARY ..STITUTE.

AT an examination in practical sanitary science held in London on May 6 and 7, fifteen candidates presented themselves. The following six candidates were awarded certificates:—G. J. Abell, Exmouth; A. A. Fillary, Manor Park; J. Lawrence, Paddington; R. M. Macfarlane, Chelsea; W. H. Moffatt, Wood Green, N.; W. A. Passmore, Bedford-row, W.C.

ENGINEERING SOCIETIES.

THE JUNIOR INSTITUTION OF ENGINEERS.—On Thursday, the 12th inst., a visit was paid by this Institution to the Great Northern, Piccadilly, and Brompton Railway Works, the party numbering about one hundred. They were received on behalf of the engineers, Sir James Szlumper and Mr. W. Szlumper, by Mr. A. F. Baynham, resident engineer of the South Kensington to Holborn section. Mr. Price was also present on behalf of the contractors for the works. The railway is an amalgamation of two railways, viz.: the Brompton and Piccadilly Circus Railway and the Great Northern and Strand Railway. The Brompton and Piccadilly Circus Railway will extend from a physical junction with the Metropolitan District Railway west of Earl's Court Station to Holborn at the upper end of the new County Council street. It there forms a junction with the Great Northern and Strand Railway to King's Cross and Finsbury Park. The Brompton and Piccadilly Circus Railway Act was passed in the year 1897, and that of the Great Northern and Strand in 1899; they were amalgamated by Act of Parliament in 1902. The works were commenced in the early part of 1902 and are in operation throughout the whole of the line, more than half the tunnelling having been completed. The ordinary "Greathead" shield was used to commence with, but after the works had been in progress for a short time an improvement on it was made by fixing an electrically-driven excavating wheel at the face of the shield, which obviated the necessity of the clay being excavated by hand to permit the shield to push forward. This appliance has proved to be a great success, and is now in use over the whole of the line. With the original "Greathead" shield, the maximum number of tunnel rings completed in any week was about 40, whereas with the new rotary excavating machine as many as 72 rings have been inserted per week. This machine will be seen at work at Brompton-road Station, where two shafts, each 23 ft. in diameter, have been sunk to a depth of about 60 ft. from the surface, for the provision of four lifts. Temporary connexions have been made between the foot of these lifts and the railway tunnels. Both the up and down station tunnels have been completed, each 21 ft. 2½ in. internal diameter. The running tunnels in a westward direction have been completed and one of the tunnels eastward is completed for a considerable distance.

LONDON TRAFFIC COMMISSION.

AT the sitting of this Commission on Thursday last week, evidence was given by Mr. Charles Carpenter, the Chief Engineer to the South Metropolitan Gas Company. Witness described the district over which his company supplied gas, and said that it was comparatively rare to have a complaint of obstruction or inconvenience caused by the laying of gas mains, although their area contained 1,100 miles of gas mains. During last year, 687 openings of ground were necessitated owing to escapes of gas in the connexions to private consumers, and 100 openings on the services supplying the public lamps. The introduction of the penny-in-the-slot system had changed the principles governing gas supply in London during the last few years. The increased demand had resulted in the practice of laying a service main in each footway, reserving the roadway for the trunk main.

Mr. C. A. Brereton, M.Inst.C.E., partner with Sir John Wolfe Barry, submitted another scheme for through roads in London. He suggested the construction of a road west to east, commencing at the junction of Kensington Gardens-terrace and Bayswater-road, and taking the line of a number of existing streets, passing eventually in front of Liverpool-street station, and terminating in a circus, to be formed at the junction of Whitechapel High-street and Commercial-road. The road was to be a double-storied one, with a surface roadway between the building lines of 140 ft. Under the roadway would be two subways, one containing an electric railway for fast traffic, and the other electric tramcars; along the side of the tramways a continuous footway would be constructed, which would not only serve the trams, but, by being connected by stairs with the surface, would provide underground crossings for pedestrians. The north and south road would be from the Elephant and Castle to the junction of Seven Sisters-road with the Holloway-road. The cost of construction, exclusive of land, would be about 1,250,000*l.* per mile.

Mr. A. R. Stenning, surveyor, put in estimates of the cost of land. On the east and west route the cost would be 9,250,000*l.*, on which there would be a possible recoupment of 2,000,000*l.* The figures for the north to south route would be 7,000,000*l.*, with a recoupment of about 1,000,000*l.*

Sir J. Whittaker Ellis was then called. He said that he was of opinion that surface travelling was more advantageous than travelling by means of tubes, etc. He objected strongly to the construction of tramways, however, not only on the ground that they monopolised the public thoroughfares, but because they would soon be superseded by motor-cars. Witness submitted plans of a number of new main streets and thoroughfares, and, in connexion with the various schemes, advocated the widening of Waterloo Bridge, the architectural outline of which could be maintained if it were deemed as an æsthetic question desirable to do so. He was in favour of a tribunal being appointed to deal exclusively with all schemes involving interference with the public highways.

On Friday, Mr. Harper, the Statistical Officer to the London County Council, submitted a lengthy statement with regard to the tramways of London. The total length of line open for traffic, which was 62·16 miles in 1879, rose to 126·87 miles in 1889. It then remained stationary until 1901, and had, in the last two years, been somewhat increased by the extension of the London United Tramways System. Taking the whole of London there was almost one mile of tramway to every square mile of area.

Colonel E. B. Crompton, Chairman of the Kensington and Knightsbridge Electric Lighting Company, then gave evidence on behalf of his company. He agreed, in the main, with the evidence given by Dr. Kennedy the previous week.

The Commission adjourned until June 2.

METROPOLITAN WATER BOARD.

A MEETING of the Metropolitan Water Board was held on the 13th inst. at the offices of the Metropolitan Asylums Board, Victoria Embankment, Mr. R. M. Beachcroft, the Chairman, presiding.

Appointment of Chief Engineer.—The Works Committee reported that they had had under consideration the steps to be taken in connexion with the organisation of the engineering department of the Board, and had decided to ask the Board to adopt the principle that a chief engineer should be appointed for the whole of the works to be transferred to its control. If their proposal were adopted, they suggested that the salary attaching to the office should be 2,500*l.* per annum. The committee recommended "(*a*) that the Board do appoint a chief engineer; (*b*) that the appointment be made at a salary of 2,500*l.* per annum, and subject to the condition that the gentleman appointed do give his whole time to the service of the Board and be not allowed to take any private practice or other paid employment; and (*c*) that an advertisement be issued inviting applications for the appointment, and that the applications received in response to the advertisement be referred to the Works Committee with instructions to submit to the Board the names of three candidates whom they consider most suitable for the appointment." After some discussion the Board agreed to the recommendations, with the addition of the words "who should give his whole services to the Board" to the first recommendation.

Rotherhithe Tunnel.—The Works Committee also stated in their report that a letter had been received from the clerk of the London County Council informing the Board that it would be possible for the Board to lay water mains in the subway of Rotherhithe tunnel after its completion, should the Board desire to do so.

Rate of Wages and Hours of Labour.—The General Purposes Committee reported that they had considered with the Law and Parliamentary Committee the desirability of framing general clauses respecting wages, hours, and conditions of labour, and sub-contracting, suitable for insertion in contracts for the supply of goods or services to which the Board might be a party, as instructed by the Board. With regard to the desirability of framing

general clauses for insertion in the Board's contracts, they thought that, having regard to the custom so largely prevailing amongst public authorities in and about the metropolis, the Board would also desire to make some provision on the subject of workmen's wages and conditions of labour. They recommended that the following clauses should be inserted in contracts for the supply of goods or services to which the Board might be a party:—"(*a*) The contractor shall not, without the written permission of the Board, assign or sublet this contract, or any part thereof, but this prohibition shall not refer to such subletting as may be customary in the trades concerned; (*b*) the contractor shall pay to all workmen employed by him in or about the execution of this contract, or any part thereof, such rates of wages and observe such hours of labour as in the district in which the work is to be executed are generally obtained and recognised by associations of employers and trade unions, and will, throughout the execution of the contract, prominently exhibit a copy of this clause in the workshops and where work for the Board is carried on." The recommendation was adopted.

Central Offices for the Board.—The General Purposes Committee in their report also stated that they had had before them the question of the chief offices of the Board, in view of the imminence of the "appointed day." The rooms which they now occupied at Caxton Hall were no longer adequate for their purposes. Suggestions had been made that suitable chief office accommodation could be found at one or other of the existing offices of the water companies. Special attention had been given to that point, and it was found that none of the premises would afford the accommodation required. There was sufficient ground at the New River Company's premises in Rosebery-avenue to build a chief office, but, even if the Board at once decided to erect offices there, they could not be ready for occupation for some considerable time. The committee, therefore, submitted the following recommendation:—"That the estimate of 3,600*l*., submitted by the Finance Committee, be approved as an estimate of costs, debt, or liability under section 20 (3) of the Metropolis Water Act, 1902, and that the Board do take on lease for a period of twenty-one years, terminable by the Board at the end of the fifth, seventh, or fourteenth year, the whole of the upper portion of the western block of the Savoy Hotel extension (save and except the ground floor shops in the Strand and the northern shop in Savoy-court) at a rent of 3,500*l*. per annum, exclusive of rates and taxes." This was agreed to.

Other business was transacted, and the Board adjourned.

Illustrations.

COMPETITION DESIGN FOR LIVERPOOL CATHEDRAL.

THE plan, elevation, and section of this design were published in our issue of July 4, 1903, to which we may refer the reader who wishes to know the basis on which the design of the crossing is worked out. In reviewing the designs in the second competition, in our issue of May 30 of last year, we remarked that "the manner in which the central space is designed and roofed, and the lantern carried over it, shows a great deal of thought, and is illustrated by a large and ably worked-out constructional drawing." The present illustration shows the exterior architectural effect of this design of the crossing, and the way it groups with the whole.

The design was submitted in the competition under the name of Mr. (now Sir) C. A. Nicholson only; the present perspective, however, came to us under the name of the firm, Messrs. Nicholson and Corlette.

KINGSGATE HOUSE, HIGH HOLBORN.

THIS building stands partly on the site of houses in Kingsgate-street—a street which was extinguished in the recent widening of Southampton-row, and this, together with the fact that it is at the top of the new Kingsway, accounts for the figures of the two kings, the first Edward and the last, at the base of the gable. They are the work of Mr. Richard Garbe. The ground floor and basement of the building form the premises of a new branch of the National Provincial Bank of England, and the upper floors contain suites of offices.

Cornish granite is used in the lower part of the front, and Portland stone and Wrotham bricks above. The floors are of concrete, strengthened by light steel bars on a special system carried out by Messrs. Moreland and Son. Messrs. Dove Brothers were the builders and Mr. Arthur Keen the architect.

TECHNICAL SCHOOL AND FREE LIBRARY, RAMSGATE.

THIS design, but without the plans, was exhibited in last year's Royal Academy.

The architect, Mr. Stanley D. Adshead, considers that the plans sufficiently explain themselves without further comment.

CHESTALL HOUSE, STAFFORDSHIRE, AND "ONE ASH," LOUGHBORO'.

THESE two illustrations of houses built by him were sent to us by the late Mr. Larner Sugden shortly before his death.

Under the circumstances, we have not been able to procure any plans, but we give the perspective views as examples of the work of an architect who carried out a good many houses, all marked by quiet and picturesque character.

NEW CHURCH, SUMMERSTOWN, TOOTING.—The consecration of the new Church of St. Mary, at Summerstown, took place recently. The new building will accommodate 800 people, and the cost of the work has been 10,846*l*. Mr. G. Pinkerton was the architect.

The Student's Column.

ARCHES.—XX.

TABLE VIII. contains details relative to numerous masonry arches, which are representative both of ancient and of modern practice. This table is worthy of careful study, and, making due allowance for the marked differences exhibited by the proportions of the same structures, it should be useful in setting out the dimensions of proposed arches, and for the purpose of comparing calculated proportions with those that have been adopted in general practice.

Further, the careful study of this table will prove both interesting and instructive. Even allowing for the different materials used in the construction of the various bridges, some very striking comparisons will result from such an examination of the table, although no exact conclusions can be drawn from the data given without taking into account all details of construction, the loads to be carried, and all attendant conditions. But general conclusions may be drawn that should prove of practical service to the designer. In Fig. 83 we have plotted the thickness at the crown of each arch mentioned in Table VIII. in terms of the ratio of span to rise. Each example is numbered to correspond with Table VIII., and—simply as a matter of convenience—the results are divided by curves into five groups, each of which should be considered by the light of the information contained in the table.

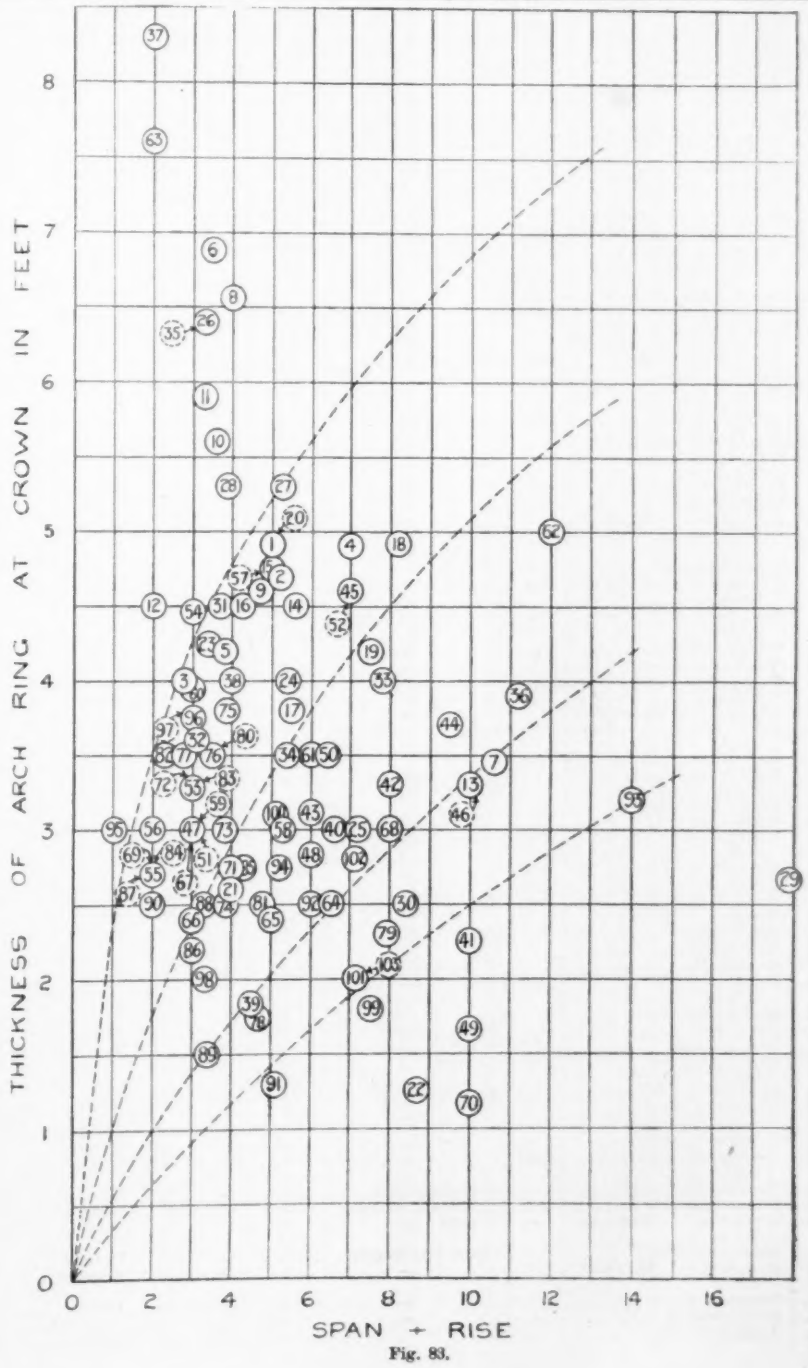
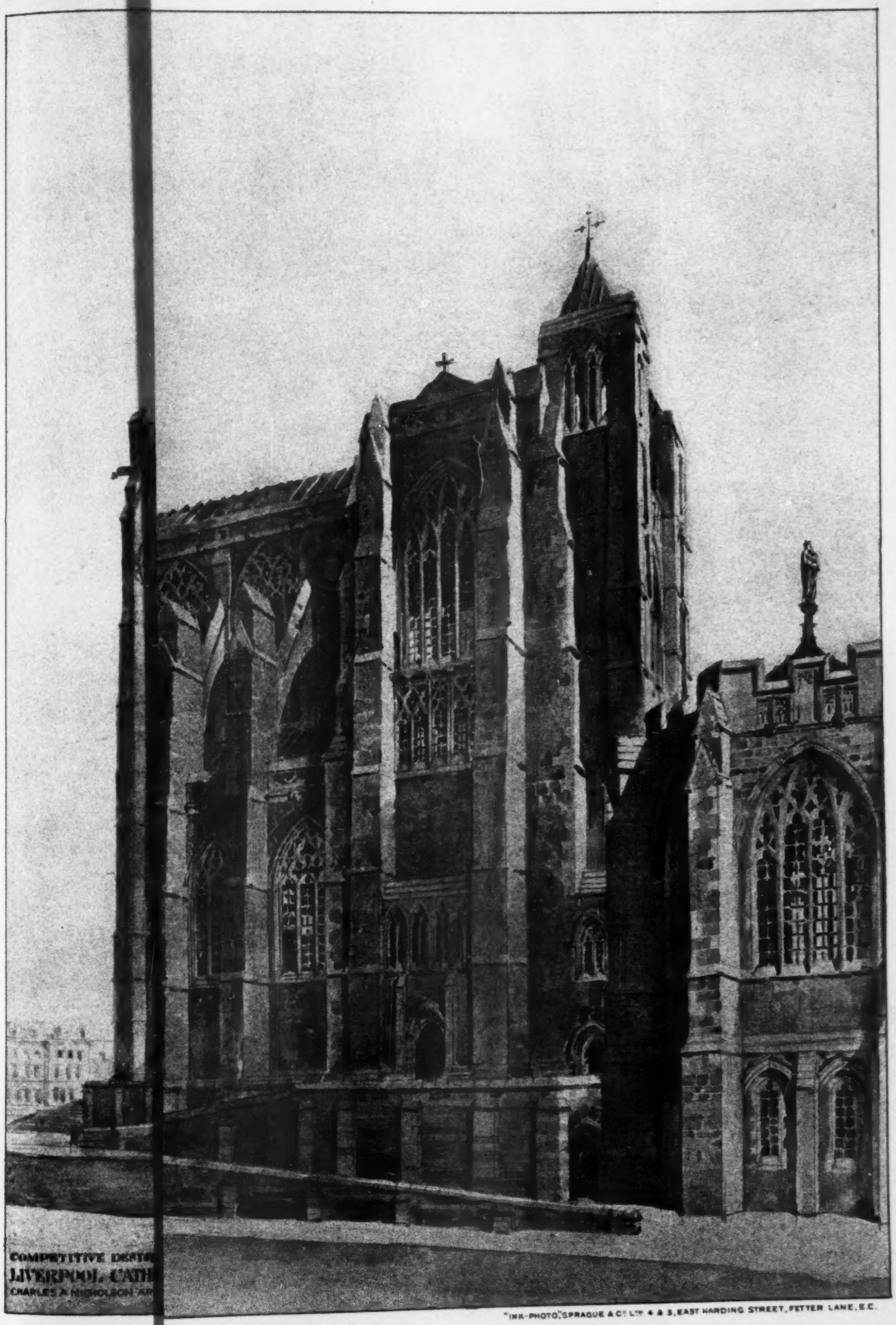


Fig. 83.

TABLE VIII.—DETAILS OF MASONRY ARCHES BUILT AT VARIOUS DATES.

Many of the arches included in this table form parts of bridges or viaducts comprising several spans. As a general rule, the longest span has been selected for the purpose of the table.

No.	Name.	Date.	Materials and Remarks.	Span.	Rise.	Radius at Crown.	Curve of Intrados.	Thickness of Arch Ring.		Spandrel Construction.	Engineer.
								At Crown.	At Springing.		
				Feet.	Feet.	Feet.		Feet.	Feet.		
1.	Plauen Viaduct, Saxony	1904	Hard slate (local)	295·2	59·1	344·5	5-centred	4·92	8·2	Lateral arched openings	Liebold
2.	Luxemburg, Luxemburg	1902	Stone (local)	277·6	53·1	173·8	Elliptical	4·7	7	Lateral arched openings	Séjourné
3.	Trezzo, Italy	1380	Granite (Destroyed A.D. 1416)	251	88	133	Circular	4	—	—	(Visconti's engineers)
4.	Morbegno, Italy	1903	Granite (three hinges)	230	33	—	3-centred	4·92	6·58	Semi-circular arches	(Rete Adriatica Ry. Co.)
5.	Cabin John, U.S.A.	1859	Granite	220	57	134	Circular	4·2	6·2	Arched voids	Meigs
6.	Jaremeze, Hungary	1893	—	213	59·6	—	Circular	6·89	10·2	Lateral arched openings	Huss
7.	Max Joseph, Munich, Bavaria	1902	Sandstone	210	19·7	—	Circular	3·45	—	Lateral arched openings	—
8.	Gutach River, Baden	1901	Sandstone	210	52·5	—	Circular	6·56	9·17	Lateral arched openings	(Railway engineer)
9.	Grosvenor, Chester	1832	(Lead in joints)	200	42	143	Circular	4·6	7	—	Hartley
10.	Gour Noir, France	1888	—	196·8	52·8	—	Circular	5·6	13·8	Lateral arched openings	Draux
11.	Schwaendeholztobel, Baden	1901	Sandstone	187	55·7	—	Circular	5·9	8·53	Lateral arched openings	(Railway engineer)
12.	Ballochmyle, Ayr, N.B.	—	—	181	90·5	90	Circular	4·5	6	—	Miller
13.	Munderkingen, Würtemburg	1893	(Three metal hinges)	164	16·4	—	Circular	3·3	3·6	Longitudinal arched voids	Bois
14.	Wheeling, W. Va., U.S.A.	1893	—	159	28	—	Circular	4·5	6	Longitudinal arched voids	Hoge and White
15.	London	1831	Granite	152	29·5	162	Elliptical	4·75	10	Longitudinal arched voids	Rennie
16.	Gloucester, Gloucestershire	—	—	150	35	98	Elliptical	4·5	—	—	Telford
17.	Elyria, Ohio, U.S.A.	1886	Sandstone	150	27	—	Circular	3·8	4·5	Gravel and stone	Kinney
18.	Turin, Italy	—	—	148	18	160	Circular	4·92	—	—	Mosca
19.	Putney, London	1886	—	144	19·3	—	—	4·2	4·2	Longitudinal voids	Bazalgette
20.	Alma, Paris	—	Rubble in cement	141	28·2	103	Elliptical	4·92	—	—	Darcel
21.	Pont-y-Prydd, Wales	1750	Rubble in lime	140	35	88	Circular	2·6	2·6	Lateral voids	Edwards
22.	Toulouse Canal, France	1902	Concrete steel	139	16	260	3-centred	1·25	3·5	Two ribs 2.5 ft. apart joined at top by concrete-steel slab, monolithic with ribs	Quintin
23.	Solis, Switzerland	1902	—	137·7	68·8	68·8	Circular	4·25	8·53	Lateral arched openings	(Albula Railway)
24.	King Edward VII., Kew, London	1903	Granite	133	24·5	—	Elliptical	4	8	Longitudinal arched openings	Barry and Brereton
25.	Coulouvrenière, Geneva	1896	Concrete	131·2	18·2	—	Circular	3	3	Longitudinal arched openings	Bois
26.	Mantes, France	1765	—	128·2	38·5	—	Elliptical	6·4	—	—	Hupeau
27.	Maidenhead, Berkshire	1837	Brick in cement	128	24·2	169	Elliptical	5·3	7	Longitudinal voids	Brunel
28.	Neuilly, France	1774	—	127·9	32	160	Elliptical	5·3	—	—	Perronet
29.	Bourbonnais, France	—	Granite	124	6·92	281	Circular	2·67	3·60	—	Vaudray
30.	Zanesville, Ohio, U.S.A.	1902	Concrete-steel	122	14·5	—	Elliptical	2·5	—	Solid, concrete & gravel filled	Landor
31.	Waterloo, London	1816	Granite	120	32	112·5	Elliptical	4·5	8	Longitudinal voids	Rennie
32.	Tongland, Kircudbright, N.B.	1801	—	118	38	·65	Circular	3·6	3·6	Longitudinal arches	Telford
33.	Napoleon, Paris	—	Rubble in cement	116	14·8	120	Circular	4	—	—	Couche
34.	Cresheim, Phila., U.S.A.	1893	Yellow sandstone	116	21·2	—	Circular	3·5	4	—	Webster
35.	Nantes, France	—	—	115·1	34·4	89·5	Elliptical	6·4	—	—	—
36.	Murr, Würtemburg	1887	(Three lead hinges)	114·8	10·2	—	Circular	3·9	5·3	Longitudinal arched voids	—
37.	Alcantara, Spain	105	(One span still standing)	110	55	—	Circular	8·3	—	—	Trajan
38.	Etherow River, Cheshire	—	—	100	25	—	Circular	4	4	—	Haskoll
39.	Bishop Auckland, Durham	1388	—	100	22	—	Circular	1·83	1·83	—	—
40.	Wellington, Leeds	1819	Local stone	100	15	—	Circular	3	7	—	Rennie
41.	Schlitza River, Austria	—	Concrete (1 : 3 : 5)	100	10	—	3-centred	2·25	2·25	Longitudinal voids	(Government engineer)
42.	Grand, Saône, Charrey	1888	—	98·4	12·3	—	Circular	3·3	4·9	Earth filled	—
43.	Trinita, Florence	1566	—	95·8	16	—	Elliptical	3·1	—	—	Ammanati
44.	Louis XIV., France	—	—	94	9·8	—	Circular	3·7	—	—	Perronet
45.	Stoneleigh, Warwickshire	—	—	92	13	—	Circular	4·6	—	—	Rennie
46.	Enz, Würtemburg	1885	(Three lead hinges)	91·8	9·2	—	Circular	3·3	4·9	Lateral voids	Liebbrand
47.	Dean, Edinburgh	—	—	90	30	49	Circular	3	—	—	Telford
48.	Licking Aqueduct, Ohio, U.S.A.	—	—	90	15	75	Circular	2·83	—	—	Fisk
49.	Dayton, Ohio, U.S.A.	1903	Concrete-steel	88	8·8	—	3-centred	1·66	3·83	Gravel filled	Turner
50.	Darlaston, Staffordshire	—	—	86·5	13·5	76	Circular	3·5	—	—	—
51.	Elkader, Iowa, U.S.A.	1888	Limestone	84	27·9	—	—	3	4	—	Tschirgi
52.	Oise, France	—	—	83	11·8	—	Circular	4·6	—	—	—
53.	Stultz, Switzerland	1903	—	82	41	41	Circular	3·28	4·92	—	(Albula Railway)
54.	Trilport, France	—	—	80·4	27·7	—	Elliptical	4·46	—	—	—
55.	Royal Border, Berwick	—	Brick in cement	80	40	40	Circular	2·7	—	—	—
56.	Conemaugh, Pa., U.S.A.	—	Sandstone in lime (without sand)	80	40	40	Circular	3	3·5	—	—
57.	Posen, Germany	—	Brick in Cement	80	16	58	Circular	4·7	—	—	—
58.	National Park, Washington, U.S.A.	1902	Concrete-steel, boulder faced	80	15	72·6	Circular	3	4	—	Douglas
59.	Schuylkill Falls, Pa., U.S.A.	1890	Masonry and earth	80	26	—	—	3	3	—	Nichols
60.	Orleans, France	—	—	79	26·3	—	Elliptical	3·95	—	—	—
61.	Hutcheson, Glasgow	—	—	79	13	—	Circular	3·5	4·5	—	Stephenson
62.	St. Maxence, France	1785	—	77	6·4	119	Circular	5	12	Continuation of voussoirs	Perronet
63.	Westminster	1750	(Rebuilt 1864)	76	38	38	Circular	7·6	14	Longitudinal arched voids	Labelye
64.	Allenton, Northumberland	—	—	75	11·5	—	Circular	2·5	3	—	Stephenson
65.	New Brunswick, N.J., U.S.A.	1893	Brick, masonry, and earth	75	15	—	Circular	2·4	2·4	—	Dean and Westbrook
66.	Earn, Perth, N.B.	—	—	75	24	—	Elliptical	2·4	3·2	—	Rennie
67.	Big Rock Creek, Ill., U.S.A.	1904	Concrete-steel	75	25·57	59	3-centred	3	—	Concrete filled	Cartlidge
68.	Staines, Middlesex	—	—	74	9·2	—	Circular	3	6	—	Rennie
69.	Edinburgh, N.B.	—	—	72	36	36	Circular	2·75	—	—	Mylne
70.	Waterloo, Iowa, U.S.A.	1903	Concrete-steel	72	7·2	120·5	3-centred	1·16	2·6	Sand filled	(Marsh Bridge Co.'s engineer)
71.	Black Rock, Pa., U.S.A.	—	—	72	16·5	47	Circular	2·75	2·75	—	Robinson
72.	Rariton River, U.S.A.	1902	—	72	24	39	Circular	3·33	3·33	—	—
73.	Brent, Middlesex	1837	Brick in cement	70	17·6	44	Elliptical	3	—	Longitudinal voids	Brunel
74.	Wellesley, Limerick	—	—	70	17·5	—	Elliptical	2·5	—	Longitudinal voids	Nimmo
75.	Lea, London	—	Brick	70	17·5	—	Elliptical	3·8	3·8	—	Braithwaite
76.	Rockville, U.S.A.	—	—	70	20	40·3	Circular	3·5	3·5	—	—
77.	Swatara, Pa., U.S.A.	—	Brick, stone faced	70	25	—	Circular	3·5	3·5	—	Osborn
78.	Herkimer Via. (N.Y.), U.S.A.	1903	Concrete-steel	66·5	14	46·5	Circular	1·75	4·5	Spandrels gravel filled. Expansion joints over each pier	Watson
79.	Staines, Middlesex	—	—	66	8·3	—	Circular	2·3	5·8	Longitudinal voids	Rennie
80.	Ouse, York	—	Brick, stone faced	66	19·3	—	Elliptical	3·5	7	Longitudinal voids	Greene
81.	Bow, London	1837	Granite	66	13·7	47	Elliptical	2·5	4	Solid masonry	Walker and Burgess
82.	New Brunswick (N.J.), U.S.A.	1903	Limestone	66	28	—	Circular	3·5	—	Earth filled	Brown
83.	Landwasser, Switzerland	1902	Limestone	65·6	32·8	32·8	Circular	3·28	4·42	—	(Albula Railway)
84.	Hoghton, Lancashire	—	—	65	32·5	—	Circular	2·75	2·75	—	Haskoll
85.	Rivanna Aqueduct	—	—	65	15	—	Circular	2·75	4	Solid masonry	Elliot
86.	Bewdley, Worcester	—	—	60	20	33	Circular	2·2	—	—	Telford
87.	Conemaugh (new), Pa., U.S.A.	1890	—	60	30	—	Circular	2·7	2·7	Masonry and loose stone	Brown
88.	Chestnut-st., Phila., U.S.A.	—	Brick in cement	60	18	34	Circular	2·5	—	—	Kneass
89.	Llanrwst, Denbigh	1636	(Pointed at crown)	58	17	33	Circular	1·5	—	—	Inigo Jones
90.	Carrollton, Maryland, U.S.A.	—	Granite	58	29	29	Circular	2·5	2·5	—	—
91.	Glatt, Switzerland	—	(Three lead hinges)	55·8	11	—	Circular	1·3	2·5	Longitudinal arched voids	—
92.	Monocacy, Maryland, U.S.A.	—	—	54	9	45	Elliptical	2·5	—	—	Fisk
93.	Nemours, France	—	—	53·7	3·8	—	Circular	3·2	—	—	Perronet
94.	Forth, Stirling, N.B.	—	—	53	10·2	—	Circular	2·75	—	—	—
95.	Abattoir-st., Paris	—	—	53	5·1	—	Circular	3	—	—	—



COMPETITIVE DESIG
LIVERPOOL CATH
CHARLES A NICHOLSON AR

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NICHOLSON & CORLETTE.

DATES.

general rule, the longest span has

Girel Construction.	Engineer.
Arched openings	Liebold
Arched openings	Séjourné (Visconti's engineers)
—	(Rete Adriatica Ry. Co.)
ular arches	Meigs
oids	Huss
rched openings	—
rched openings	—
rched openings	(Railway engineer)
—	Hartley
rched openings	Draux
Arched openings	(Railway engineer)
—	Miller
linal arched voids ..	Bois
linal arched voids ...	Hoge and White
linal arched voids ...	Rennie
—	Telford
d stone.....	Kinney
—	Mosca
linal voids.....	Bazalgette
—	Darcel
voids	Edwards
2.5 ft. apart joined at concrete-steel slab, thic with ribs	Quintin
rched openings	(Albula Railway)
linal arched openings	Barry and Brereton
linal arched openings	Bois
—	Hupeau
linal voids.....	Brunel
—	Perronet
—	Vaudray
ncrete & gravel filled	Landor
linal voids.....	Rennie
linal arches	Telford
—	Couche
—	Webster
—	—
linal arched voids ...	—
—	Trajan
—	Haskoll
—	—
—	Rennie
linal voids	(Government engineer)
led	—
—	Ammanati
—	Perronet
—	Rennie
voids	Liebbrand
—	Telford
—	Fisk
lled	Turner
—	—
—	Tschirgi
—	—
—	(Albula Railway)
—	—
—	—
—	—
—	Douglas
—	Nichols
—	—
—	Stephenson
ation of vousoirs....	Perronet
dinal arched voids ...	Labelye
—	Stephenson
—	Dean and Westbroo..
—	Rennie
e filled.....	Cartlidge
—	Rennie
—	Myine
led	(Marsh Bridge Co.'s engineer)
—	Robinson
dinal voids.....	Brunel
dinal voids.....	Nimmo
—	Braithwaite
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ls gravel filled. Expan-	Osborn
oints over each pier	Watson
dinal voids.....	Rennie
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asonry.....	Walker and Burgess
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—	(Albula Railway)
—	Haskoll
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dinal arched voids....	—
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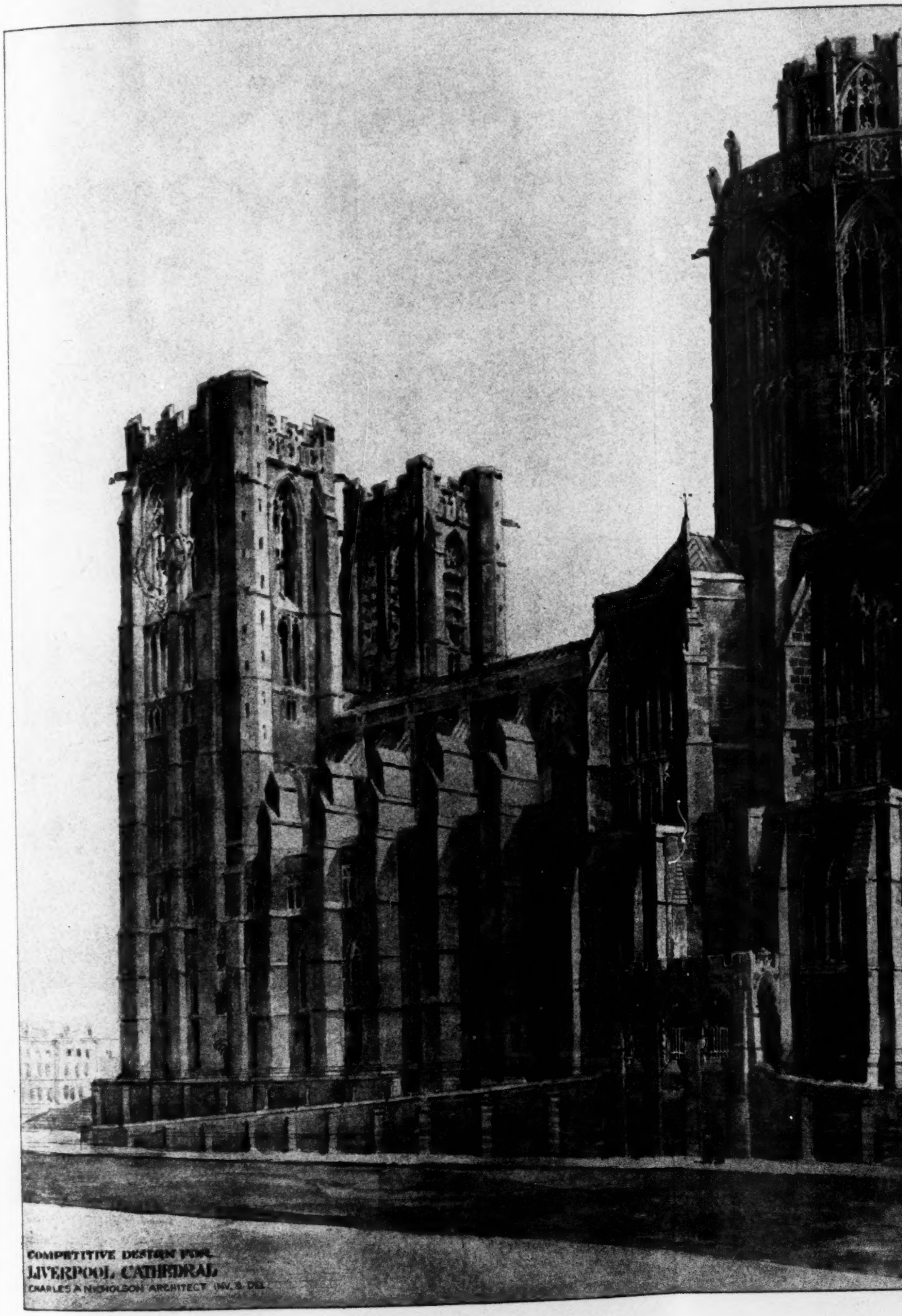
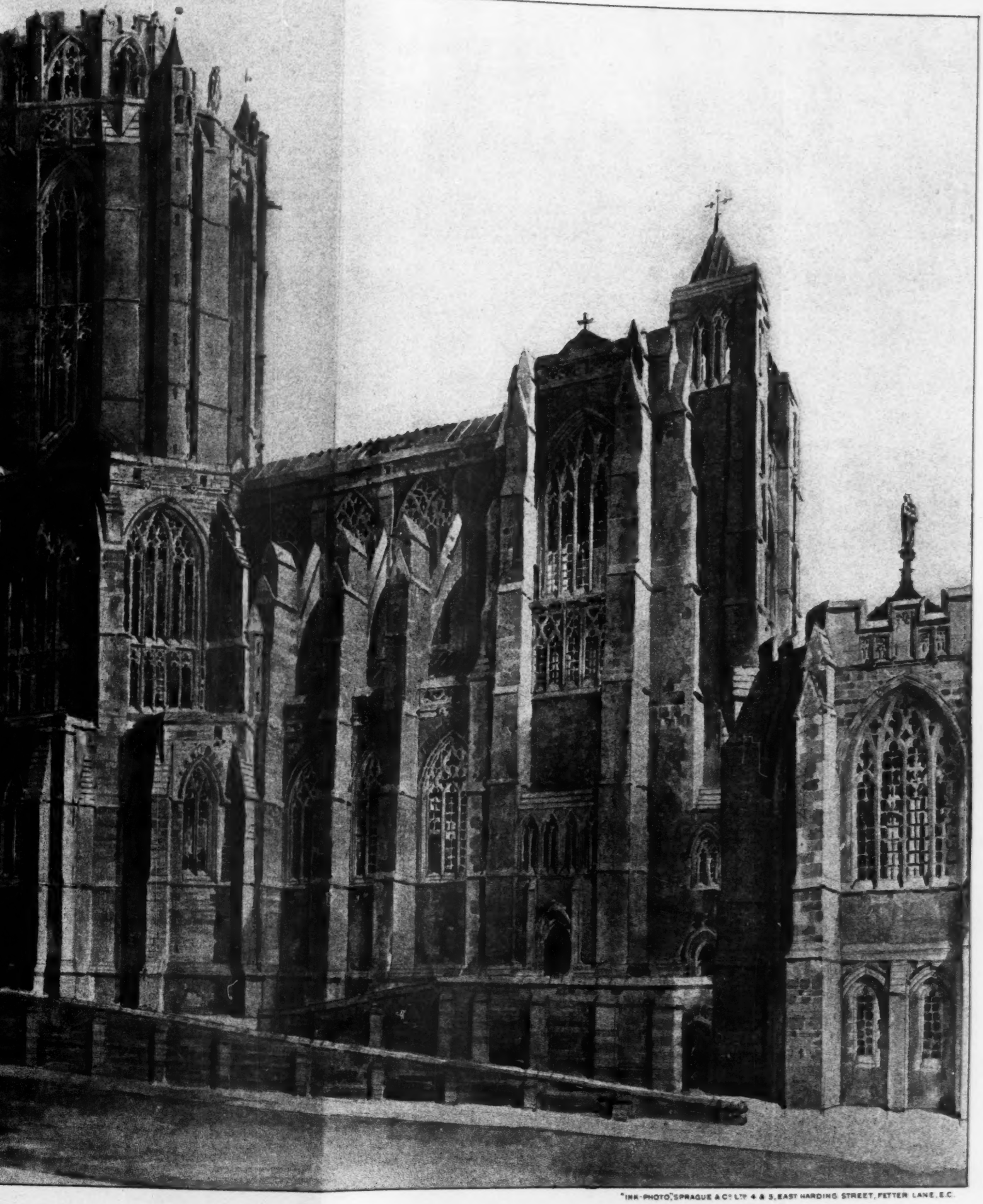


PERSPECTIVE VIEW OF DESIGN FOR LI



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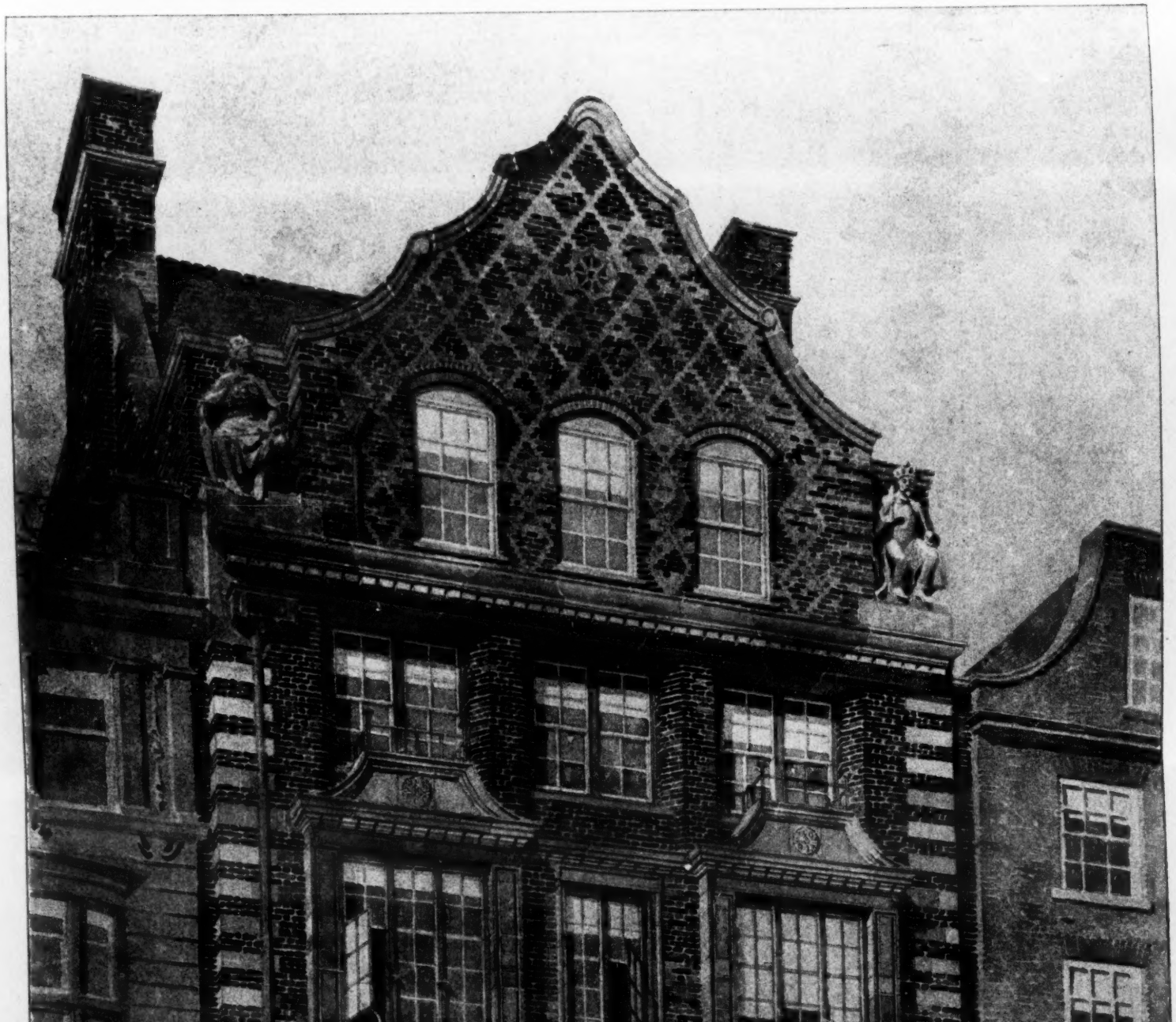
FOR LIVERPOOL CATHEDRAL.—By Messrs. Nicholson & Corlette.



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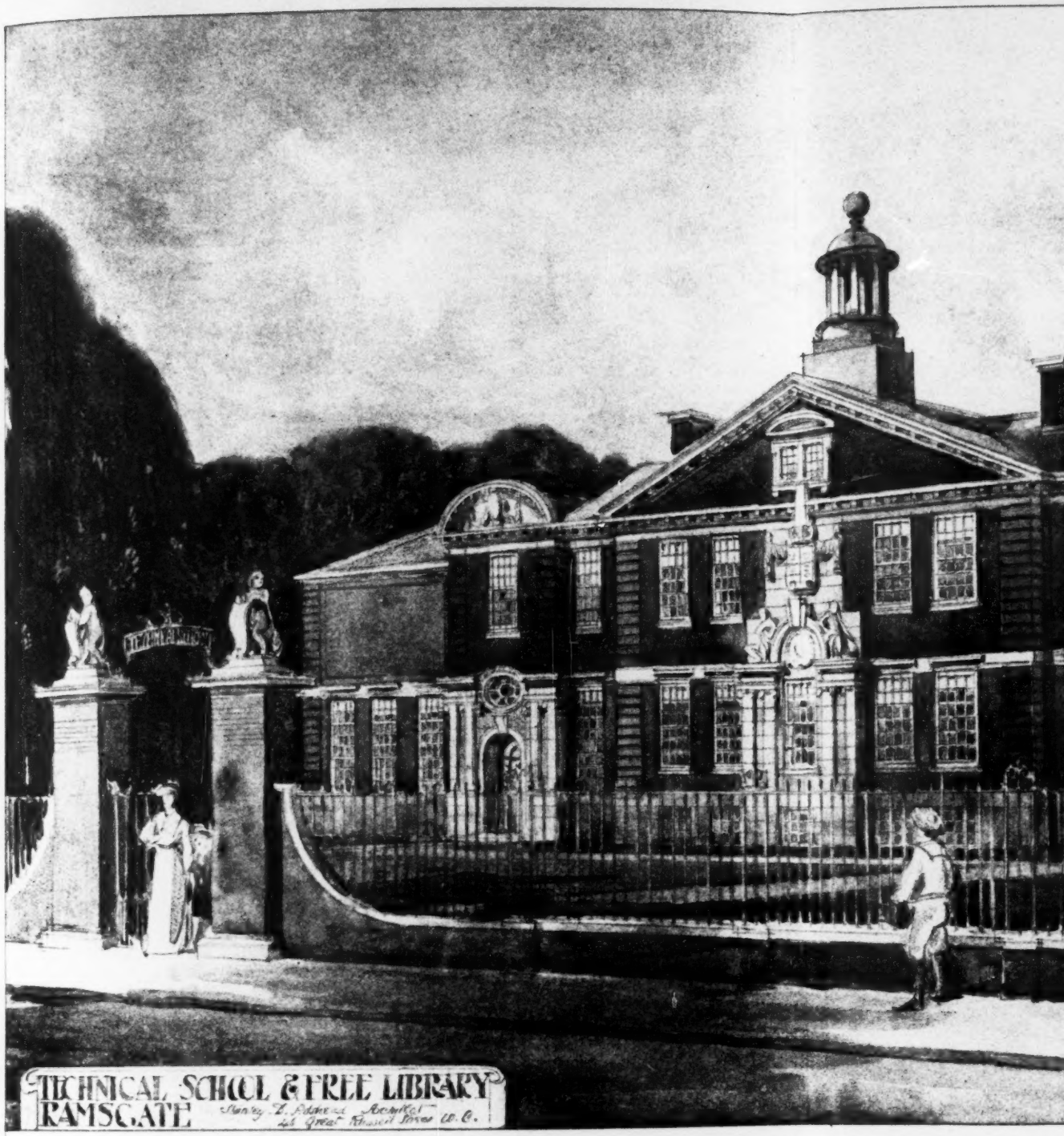
"KINGSGATE HOUSE," HIGH HOLBORN.—Mr. Arthur Keen, F.R.I.B.A., Architect.



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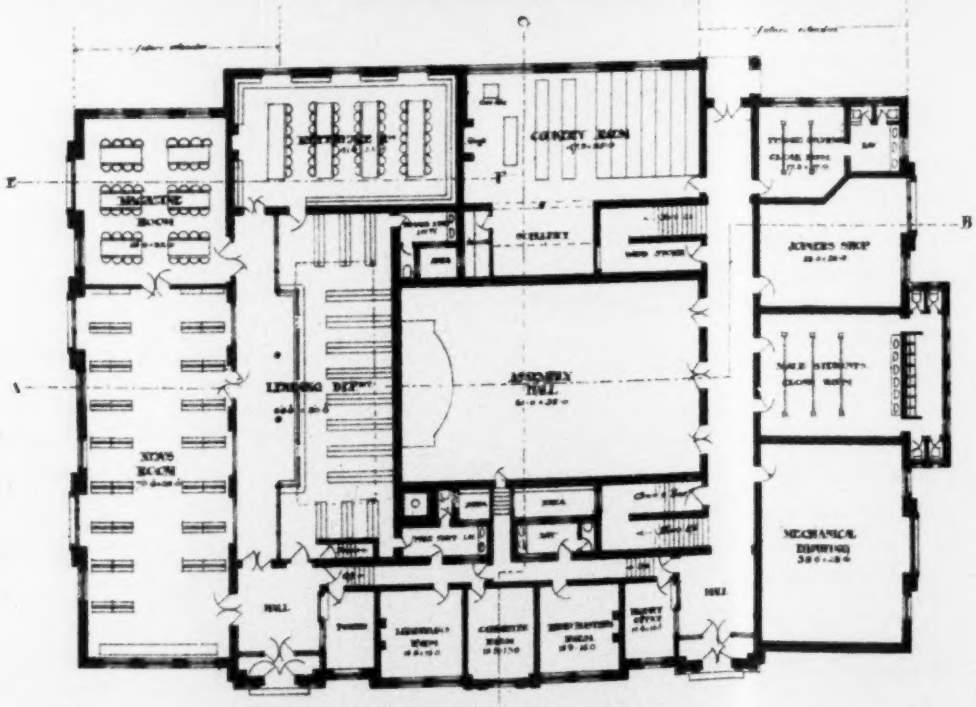
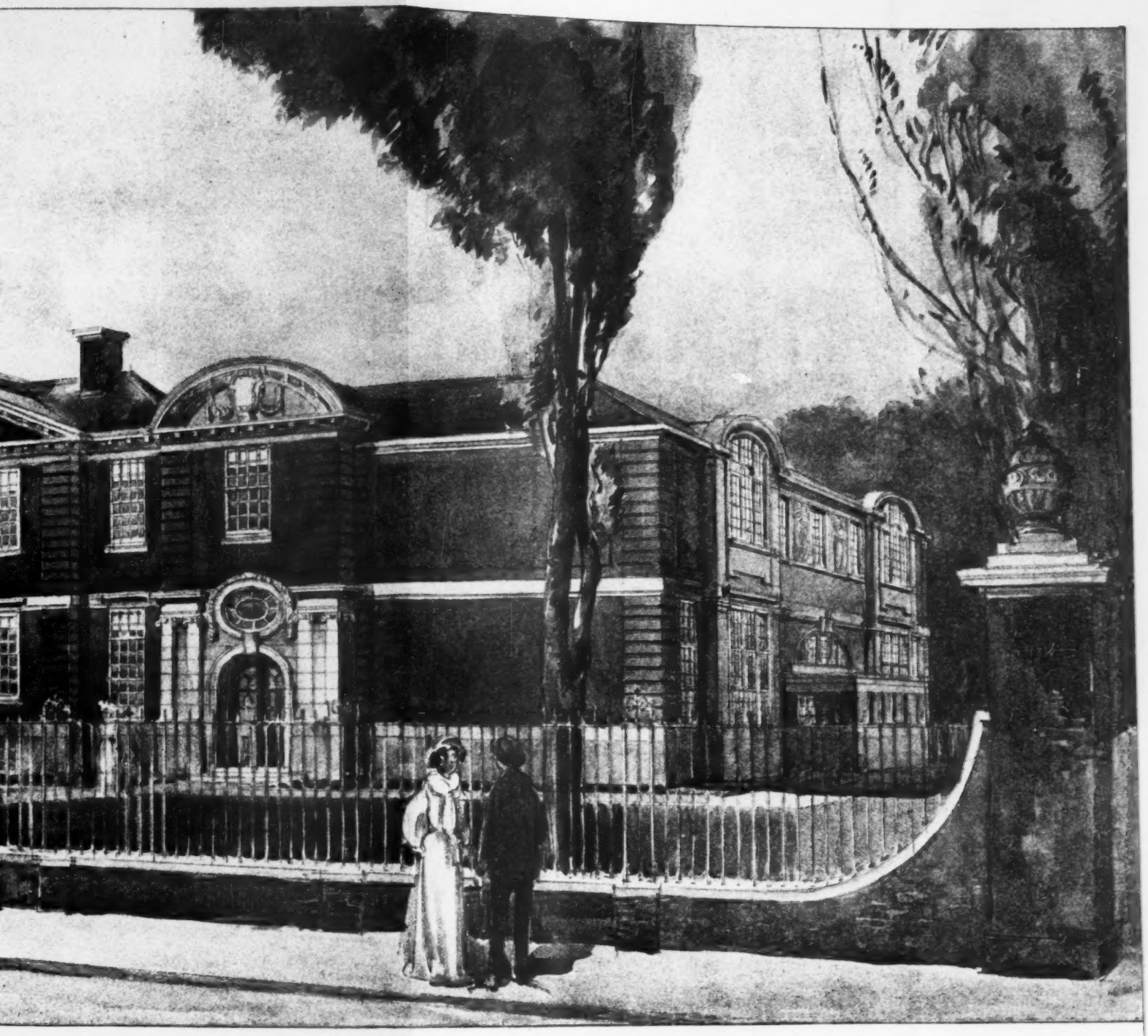
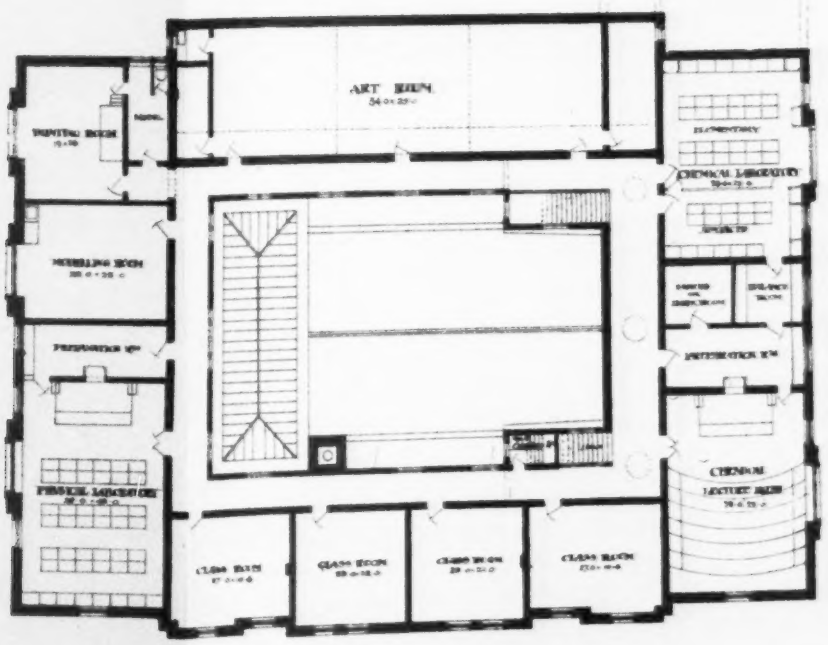


GROUND PLAN





FIRST FLOOR PLAN

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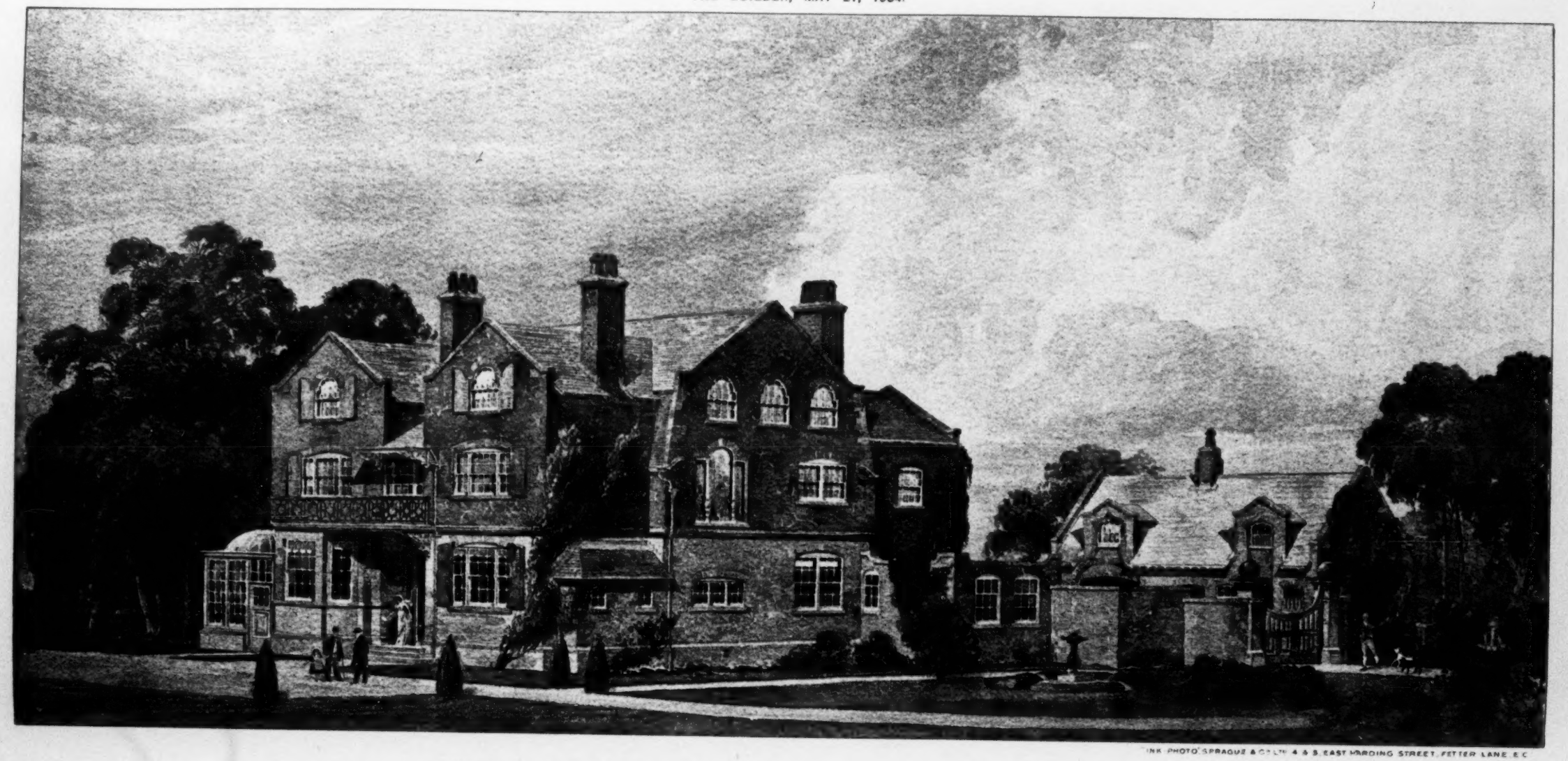

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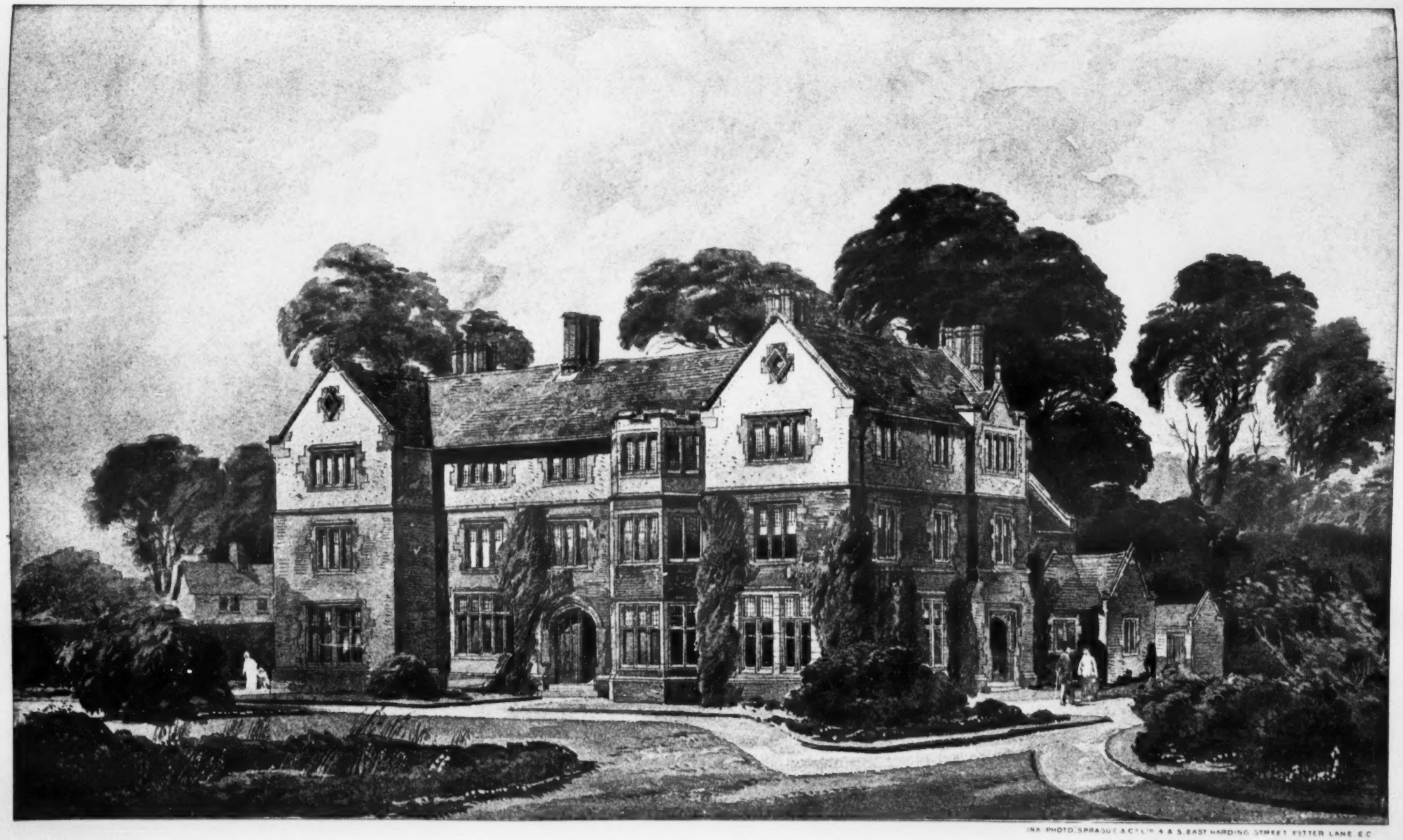
"CHESTALL HOUSE," STAFFORDSHIRE.—The late Mr. Larner Sugden, Architect



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"ONE ASH, LOUGHBORO' - THE LATE MR. LARNER SUGDEN, ARCHITECT

TABLE VIII.—DETAILS OF MASONRY ARCHES BUILT AT VARIOUS DATES (*continued*).

No.	Name.	Date.	Materials and Remarks.	Span.	Rise.	Radius at Crown.	Curve of Intrados.	Thickness of Arch Ring.		Spandrel Construction.	Engineer.
								At Crown.	At Springing.		
				Feet.	Feet.	Feet.		Feet.	Feet.		
96.	Dôle, France	—	—	52	17·5	—	Elliptical ...	3·75	—	—	—
97.	Château-Thierry, France	—	—	51	17	—	Elliptical ...	3·75	—	—	Perronet
98.	Avon Viaduct, Somerset	—	Brick in cement	50	15	28·3	Elliptical ...	2	—	—	Vignoles
99.	Newton Stewart, Wigtonshire	—	Brick	50	6·6	—	Circular	1·8	2·5	—	Rennie
100.	Race-st., Phila., U.S.A.	1893	—	50	9·8	—	Circular	3·1	3·1	Masonry and loose stone	Wilson
101.	James River Aqueduct, U.S.A.	—	—	50	7	—	Circular	2	—	—	Ellet
102.	Byrd Creek Aqueduct, U.S.A.	—	—	50	7	—	Circular	2·8	4·2	Solid masonry.....	Ellet
103.	Filbert-st., Phila., U.S.A.	—	Brick in lime	50	7	—	Circular	2	—	—	—

METROPOLITAN ASYLUMS BOARD.

THE final meeting of this Board before the election was held on Saturday last week at the offices on the Victoria Embankment.

Among the correspondence received from the Local Government Board was a letter sanctioning an expenditure of 320*l.* on the installation of telephones and fire alarms at Leavesden Asylum, and a letter sanctioning a proposal to enter into a contract with Messrs. Clements, Jeakes, and Co., for the remodelling of fifteen stoves in the wards of the South-Western Hospital, without first advertising for tenders.

Eastern Hospital.—On the recommendation of the Finance Commitee, it was agreed to apply to the Local Government Board for an order, authorising the expenditure of a sum, not exceeding 457*l.*, on the remodelling of the laundry, and rearrangement of the machinery at the Eastern Hospital.

Works at the Head Office.—Messrs. Hovenden and Barber were appointed to take out the quantities of the cleaning and repairing works to be carried out at the head office of the Board.

Leavesden Asylum.—The action of the Works Committee in instructing Messrs. W. H. Barber and Son to measure up the variations on Mr. Martin's contract for the erection of the female attendants' home at this asylum was approved.

South-Eastern Hospital.—The Works Committee reported that they had allowed Messrs. W. H. Barber and Son to charge an extra one per cent. commission upon the total value of the accepted tender for the works of reconstruction at this hospital, on account of extra work having been necessary.

Quantity Surveyors.—On the recommendation of the Works Committee it was agreed that so much of the resolution of the Board of March 16, 1895, as directs that the same quantity surveyor who may be appointed to take out the quantities of building and other works shall be also appointed to measure up "extras" and "omissions" on the completion of the works, be, and is hereby rescinded.

The Committee were of opinion that it was not always desirable or necessary that the managers should be bound to call in the same surveyor, who had taken out the quantities, to measure up works on completion. It was thought that the Board should have a free hand in the matter.

COMPETITIONS.

LIBRARIES, ECCLESTON AND SUTTON.—The following is the result of the competition for two branch libraries at Eccleston and Sutton:—Messrs. Briggs and Wolstenholme, Richmond-terrace, Blackburn, first for Eccleston and Sutton; Mr. Lloyd E. Ward, 1, Waterloo-street, Birmingham, second for Eccleston Library; Mr. Albert Warburton, 2, Bold-street-chambers, Warrington, second for Sutton.

NORTHERN COUNTIES DEAF AND DUMB INSTITUTION, NEWCASTLE-ON-TYNE. — In a limited competition for the extensions and alterations to the Northern Counties Deaf and Dumb Institution the committee selected the design of Mr. Stephen Piper, architect, 4, Ridley-place, Newcastle. The proposed outlay is about 8,000*l.*

CRICKET AND GOLF PAVILION, BULWELL FOREST, NOTTINGHAM.—A new cricket and golf pavilion has been erected on Bulwell Forest Ground, Nottingham. The building consists of a dressing-room for cricketers at one end, and another for golf players, with a room in the centre for general use. In the front is a verandah. The erection has cost about 500*l.*, and the work has been carried out by Mr. George Barron, under the direction of Mr. F. B. Lewis, the City Architect.

BOOKS RECEIVED.

SPON'S ARCHITECTS' AND BUILDERS' PRICE BOOK; 1904. By W. Young. Edited by Clyde Young. (E. and F. N. Spon.)

GREAT MASTERS; REPRODUCTIONS IN PHOTOGRAVURE. Part XV. (W. Heinemann. 5s.)

A PRACTICAL GUIDE FOR SANITARY INSPECTORS. By F. C. Stockman. (Butterworth and Co., and Shaw and Sons. 5s.)

JOURNAL OF THE SANITARY INSTITUTE: April quarter. (E. Stanford. 2s. 6d.)

SOFT WOODS AND COLONIAL TIMBERS. By Percy A. Wells. (Percival Marshall and Co. 6d.)

BRITISH ENGINEERING STANDARDS CODED LISTS, VOL I. (Robert Atkinson, Ltd.)

Correspondence.

SHAKESPEARE'S FRIENDS.

SIR,—The pleasant little churchyard of St. Mary the Virgin, Aldermanbury, has for some time past been in use as a public resting-place, and special attention has lately been directed to this beautiful church on account of its being threatened with demolition, but the venerable vicar, the churchwardens, and parishioners have been successful in warding off that danger at the Easter vestry meeting. I wish, with your kind permission, just to inform your numerous readers that in the centre of the churchyard there is standing a bust of Shakespeare and pedestal:—"In memory of John Heminge and Henry Candell, fellow actors and personal friends of Shakespeare, who lived many years in the parish of St. Mary the Virgin, and are buried there. The memorial was given to the nation by Charles Clement Walker, Esquire, of Lilleshall Old Hall, Shropshire. A.D. 1896."

Then at the north end of Carter-lane, St. Paul's, is fixed a tablet inscribed thus:—"Upon this site formerly stood 'The Bell,' Carter-lane, from whence Richard Quincy wrote the letter to William Shakespeare, dated the 25th Octr., 1598. This is the only letter extant addressed to Shakespeare, and the original is preserved in the museum at his birthplace, Stratford-upon-Avon. This tablet was placed upon the present building by leave of the Postmaster-General 1899."

SCRUTINEER.

OBITUARY.

MR. BIRCH.—Mr. George Henry Birch, whose death we announced in our last issue, had been in but indifferent health during some months past, and in last January went to Italy and Sicily to seek recovery. He died on the 10th inst., two days after his return. Mr. Birch was the son of Mr. Charles Birch, and was born at Canonbury on January 2, 1842, and had his earlier education at Darnell's private academy in Theberton-street, Islington. When sixteen years of age he was articled to Mr. Charles Gray, architect; he subsequently entered the offices of Sir Matthew Digby Wyatt and of the late Ewan Christian. Mr. Birch was elected an Associate of the Royal Institute of British Architects in 1876; in 1871-2-3 he served as Vice-President, and in 1874-5 as President, of the Architectural Association. He was the honorary secretary of the London and Middlesex Archæological Society during the interval 1877-83; Cantor Lecturer to the Society of Arts in 1883; a Vice-President of the St. Paul's Ecclesiological Society; and a Fellow of the Society of Antiquaries. In November, 1894, he succeeded the late Wyatt Papworth as Curator of the Soane Museum, being the fifth architect who has held that appointment since Sir John Soane's death in 1837. For that post he was eminently qualified by his attainments in the field of historical archæology and art; as we observed some few years ago in a description we published of the chief contents of the museum, he was emphatically the right man in the right place. In 1884, and upon a very short notice, Mr. Birch prepared the models for, and carried out the erection of, the "Old London Street" for the Health Exhibition at South Kensington of that year, illustrations of which, after two drawings by Mr. A. B. Pite, were published in the *Builder* of May 17, 1884. Mr. Birch's original water-colour drawing, which constituted an interesting record of the work, was shown in the Royal Academy exhibition of 1886. The Old London Street, with its church tower, gate, wall, etc., constructed at a cost of nearly 14,000*l.*, and based throughout upon authentical data, formed a highly-popular exhibit. Some portions of the models were subsequently used for fitting up the Boltons studios in Redcliffe-road, S.W. Mr. Birch was the author of a folio volume, "Old House, Lime-street, City," for which some of the drawings were made by Mr. R. Phené Spiers; and a large and important work upon London churches of the XVIIth and XVIIIth centuries, which we reviewed, giving some illustrations, on June 6, 1896. At the end of last year was published his illustrated volume, "London on Thames in Bygone Days." He was, in fact, a leading authority upon all matters relating to the history, both domestic and architectural, of London and, we may add, of Paris. Some while ago he devoted much of his leisure time to the rearrangement and grouping of the late Mr. J. E. Gardner's unrivalled collection illustrative of the topographical history of London; his own collection of prints and drawings, and sketches, which we have had the advantage of inspecting, is of interest and value. On behalf of the Corporation of the City, Mr. Birch undertook the preparation of a set of designs for a scheme of triumphal arches and general decoration at London Bridge and its approaches for the Coronation procession which had been fixed to take place on June 27, 1902. When in active practice Mr. Birch carried out a great deal of architectural work in Hampshire, Suffolk, Worcestershire, Middlesex, and other counties; he made the plans and designs of Acton Reynald Hall, Shrewsbury, for Sir Walter Corbet, Bart; he prepared all the drawings for the scheme of painting and redecoration for St. Nicholas Cole Abbey Church in the City (1884), and was architect of the Rectory House in Lambeth-hill. He also carried out the alterations and improvements, with an extensive redecoration, of the parish church (1828) of Staines, Middlesex, in 1885. Amongst his minor works we may mention the Working Men's Club buildings at Scholes, in Yorkshire. His dexterity and ingenuity were often in request for the making of models, toy-houses, etc., for his younger friends, of whom he was a great favourite; and at the museum he spared no pains in assisting and guiding the visitors in their inquiries or research. Mr. Birch possessed a wide and uncommon knowledge of ancient and modern history, and was well versed in architectural literature.

BUSINESS PREMISES, EDINBURGH.—New business premises for Messrs. Lorimer and Son have been erected in Union-street, Edinburgh. The building has been built from the plans of Mr. R. G. Wilson, architect.

CHAPEL EXTENSION, HUCKNALL, NOTTINGHAM.—The memorial stones of the extension of the Wesleyan Methodist chapel at Hucknall were laid recently. The additional building will be built on to the rear end of the old chapel, the whole structure providing accommodation for 470 persons, or an increase of 120. The contractors for the work are Messrs. Vallance and Blythe, Mansfield, and the architect Mr. J. E. Goodacre, Mansfield. The cost is estimated at 650*l.*

GENERAL BUILDING NEWS.

OLIVER PLUNKETT MEMORIAL CHURCH, OLDCASTLE, IRELAND.—On the 1st inst the dedication took place of the Oliver Plunkett Memorial Church, Oldcastle. The church, which is built in the Gothic style, comprises nave, transepts, sanctuary, side chapels, and two sacristies. It is 131 ft. in length, and the nave measures 34 ft. in width, and the entire breadth across is 90 ft. The sanctuary measures 31 ft. by 24 ft. 6 in., and the height to the apex of the ceiling is 43 ft. The tower, which is not as yet complete, is only 53 ft., over which it is intended to build a bell stage and spire, which will, it is expected, bring the total height of the church to the top of the cross to 146 ft. Over the entrance door there is a five-light window, and the sanctuary is lighted by three-light lancet windows, with moulded arches, springing from polished shafts. At the end of the church and behind the High Altar are three stained-glass windows, representing, in the centre, Immaculate Conception, St. Brigid, the name which the old church went by, on one side, and St. Patrick on the other, all by Meyer, of Munich. The building has been carried out by Mr. Patrick Nolan, Monaghan, the plans having been prepared by Mr. W. H. Bryne, Dublin, who supervised the work.

ST. JOSEPH'S CHURCH, LIMERICK.—St. Joseph's new church, Limerick, was formally opened on the 24th ult. Limerick limestone has been used throughout. The bell tower, when finished, will attain an elevation of 160 ft., the church being 40 ft. at the eaves, with a rise of over 20 ft. to the apex. A large-sized statue of St. Joseph, executed by Mr. Smith, sculptor, Dublin, is placed midway up the campanile, and two flights of cut stone steps lead to the main entrance. The church will accommodate 2,000 persons, its greatest length being 66 ft. by 40 ft, the transept being 100 ft. The floor is of wood, bordering a passage of mosaic tiles running through the centre. The organ gallery, supported by two granite pillars, faces the high altar. Inside the sanctuary an oak wood-block floor is laid down, and the Communion rail is capped with polished oak supported by metal columns. The walls are painted in light-coloured duresco. The high altar is in part Sicilian marble, supported by two clusters of circular columns of empress red marble, with carved caps and moulded bases. The tabernacle is of Carrara marble, sustained by pillars of marble. Statues of SS. Peter and Paul are to right and left of the altar, while further out are the figures of two angels bearing candelabra. The front panel of the altar support is of Sicilian marble, representing the Last Supper. The side altars are dedicated to the patron saint of the church and Our Lady of Victories, the material used being the same as that in the high altar. The chancel arch is sustained by two marble pillars of rouge royal, richly carved at base and top. A massive silver sanctuary lamp, supplied by Messrs. Egan, jewellers, Cork, has been presented. The church will be lighted throughout with electricity, the installation having been placed by the Ampere Company, the heating apparatus being supplied by Messrs. Musgrave and Co., Belfast. The erection of the church was entrusted to Messrs. Ryan, builders, Limerick, the architect being the late City Surveyor, Mr. W. E. Corbett, C.E., and clerk of the works, Mr. T. Stafford. High and side altars are the work of Messrs. E. Sharpe, sculptors, Dublin, and the painting, etc., was carried out by Mr. J. M'Namara, Limerick.

RESTORATION OF THURLESTONE CHURCH, DEVON.—The interesting old church at Thurlestone was reopened, after restoration, by the Bishop of Exeter on the 28th ult. Portions of the present church were built in the XIIIth century, probably upon the site of a still older church, for it has a fine Norman font of red sandstone. In the beginning of the XVth century, probably in the year 1407, a lady chapel was thrown out, and subsequently an aisle, and in the XVIth century a porch was added, and later still, a vestry. The parish of Thurlestone derives its name from a rock in the bay, called the Thurlestone rock, which forms a natural arch. The first syllable is derived from the Anglo-Saxon "thyrlian," to pierce. Thurlestone means Holestone. The title of the dedication of the church is lost, but there is reason to believe that it is All Saints, as upon that festival the churchwardens place a pair of gloves, and a copy of an ancient deed upon the high altar for the rector as a quit rent for the piece of glebe upon which the church house is built. The Bishop, therefore, rededicated it to God in honour of All Saints. The church, during the early part of last century, went through some damaging restoration and repairs, which have had, in a great measure, to be undone in the present restoration. The architect, Mr. Geo. H. Fellowes Prynne, when consulted in 1900, found the church to be in a deplorable condition, necessitating the rebuilding of certain portions, and new roofs in nave, and aisle. Every bit of the old stone or woodwork that it was possible to retain has been replaced, and the main characteristics of Devonshire churches have been carefully adhered to. The work has been executed by Mr. G. B. Andrews, builder, of Ivybridge, at a cost of about 2,400*l*.

UNION CHURCH, WOODFORD.—The opening services in connexion with the New Union Church, Woodford, Essex, took place on the 28th ult. The building is about 200 ft. long—a length divided in about equal proportions between the church itself, and the hall, Sunday school, and classrooms at the rear. The internal dimension of the church is 80 ft. The plan may be described as being a Greek cross, with shallow transepts, and the unusual width of which, some 35 ft., was of assistance to the architect in minimising the number of obstructing piers or columns. The nave, which is also 35 ft. in width, is roofed by a barrel ceiling. The piers, which are cased in rouge royal marble, carry wide semi-circular arches formed of bricks specially made of unusual length and thickness. The aisles are ceiled also with a semi-circular or barrel ceiling with a flat-tiled roof above. This, on the exterior, is broken into at intervals by the flying buttresses necessitated by the thrust of the nave arches. The church has seating accommodation for between 700 and 800 people. The building at the rear of the church contains a lecture hall nearly 60 ft. in length by 40 ft. in width, with an open roof, and lighted by a clerestory. The minister's and deacons' rooms, and a large church parlour are arranged above the classrooms, and a few steps above the level of the platform of the church. Above these again are the caretaker's quarters. The architect was Mr. C. Harrison Townsend, and the contractors were Messrs. A. J. Vigor and Co., while Mr. T. Gilloch acted as clerk of works.

CHURCH, SEATON DELAVAL.—The foundation stone has just been laid of the new church of St. Stephen's, at Seaton Delaval. The architect is Mr. C. S. Errington, of Newcastle, and the builder, Mr. Joseph Stobbs, of Cramlington. There is to be an apse chancel, and a baptistry at the west end. It will accommodate 300 worshippers, but can be enlarged if necessary at any future time. It will be joined to the old building by a covered way; and the former will still be used for meetings, social gatherings, etc., for members of the church.

CHURCH, SHIREBROOK, NOTTINGHAMSHIRE.—As we mentioned last week the Bishop of Southwell recently dedicated the nave of this church. The new building consists of a nave, and the old church being thrown into the new, as a south aisle, the whole gives seating accommodation for 800 persons, as against 200 formerly. The chancel of the new building is a temporary one, and the scheme will be carried out in its entirety when funds permit. The architect was Mr. H. J. Price, Nottingham, and the contractors were Messrs. Fisher Brothers, Mansfield. The length of the nave is 85 ft. 6 in., and the width of the nave and the north aisle is 35 ft. 6 in. The style adopted is a simple treatment of the Early Decorated period. The walling is coarsed rock, with faced work for the outside of local stone, and dressed walling for the inner surface. The dressings to the windows, arcade arches, buttresses, weatherings, etc., are in Weldon stone, and the material for the subject panels under the clerestory windows is Bath stone. The floor of the nave is in pitch-pine wood blocks, and the aisles are in terrazo mosaic. The windows are of stained cathedral glass. Messrs. Sharpe and Yeo are responsible for the carving. The building is illuminated by 100 16 c.-p. electric lights, the current being laid on from the Shirebrook Colliery. The church, when complete, will have a chancel 24 ft. wide and 28 ft. 6 in. in length, with an ambulatory all round, the northern portion forming the choir vestry, with the organ gallery over. The walling has been built by Messrs. Wilkinson and Son, of Bulwell; heating and electric installation, Messrs. Thomas Danks and Co., Nottingham; Messrs. F. Smith and Co., of London, are responsible for the temporary chancel; slating, Mr. A. Wright, Nottingham; oak seating, Addison and Co., Wellington, Salop. The general foreman of the works was Mr. W. Avery.

PROPOSED NEW CHURCH, WORCESTER.—Plans have been prepared by Mr. G. Fellowes Prynne, architect, of London, for a new church which it is proposed to erect on a site in London-road, Worcester. The cost of the edifice, exclusive of the tower, will be about 11,000*l*.

RESTORATION OF PARISH CHURCH, DEREHAM, NORFOLK.—The Dereham Parish Church was recently reopened after being restored. The work was carried out under the superintendence of Mr. Arthur Reeve, architect, by Mr. W. D. Hubbard, of East Dereham. The cost of the restoration has been about 1,631*l*.

CHURCH, HULL.—The Archbishop of York consecrated, on the 12th inst., the new Church of the Transfiguration, which is to serve the district of North Newington, Hull. The church, which is situated in Albert-avenue, Anlaby-road, is designed in the Early English style, and has been built of red brick, with roof of red Staffordshire tiles. Internally, the chancel arch goes close up to the roof, the arcades to the nave are of red brick with stone shafts, and the nave and chancel are domed with barrel roofs with moulded ribs. There is a pulpit of white stone with traceried panels, and the fittings of the chancel are all in oak and simple design. Messrs. Brodrick, Lowther, and Walker are the architects, and the building will accommodate 650 persons when completed. Two bays have yet to be added to the nave, and a tower is to be erected at the west end.

CHANCEL, CHRIST CHURCH, MOLDGREEN, YORKSHIRE.—On the 14th inst. the chancel added to Christ Church, Moldgreen, Huddersfield, was consecrated. The chancel, which was designed by Mr. G. F. Bodley, R.A., is 40 ft. long and 20 ft. wide. It contains a three-light high window, filled with a stained-glass representation of the Ascension. There is a window and a chamber, to which the organ has been removed, on the north side, and three two-light windows on the south side.

LOUDWATER CHURCH, BUCKS.—The new chancel of this church was opened on the 16th inst. The main portion of the original church was built in 1788 as a chapel of ease by Mr. William Davies, who spent the whole of his life of ninety-two years in Loudwater; the north wing, vestibule, and vestry being erected in 1835. The building, externally, had more the appearance of a stable than a church, while the interior effect was that of an inferior lecture hall or police-court, a box pulpit being placed against the east wall over the altar. In 1899, it was decided to rebuild the church, and plans were prepared by Mr. Geo. H. Fellowes Prynne; but owing to lack of funds, it was found impossible to commence any building operations until last year, when the contract for the new chancel was placed in the hands of Mr. H. Flint, builder, of High Wycombe. The material used for the chancel is red brick, with stone dressings and bands, and tiled roof. The cost of the work, together with necessary repairs to the old nave, has been about 2,000*l*.

NEW R.C. CHURCH, SWINDON.—The new Roman Catholic church, which has been erected in Groundwell-road, Swindon, was opened recently. The new edifice is cruciform in shape. The exterior walls are covered with an outer lining of flint, while for door entrances, etc., dressings of Corsham stone are used. Accommodation is provided for 500 persons. The structure has been erected from the plans of Mr. Doran Webb, architect, Salisbury, by Mr. Sidney Bell, builder, Andover. The estimated cost is 5,500*l*.

CONGREGATIONAL CHURCH, ILKESTON. — The foundation stones of the new Congregational church to be erected on the Wharncliffe-road, Ilkeston, were laid on the 27th ult. The church will consist of a nave 65 ft. long by 27 ft. wide, supplemented by side aisles, the east and west transepts measuring 20 ft. 6 in. wide and 12 ft. deep; the chancel will be 24 ft. wide by 19½ ft. deep. The full seating accommodation will be 530. The tower, which is to rise to over 60 ft. above the ground level, will carry a spire covered with copper, the total height to the top of the weather-vane being over 100 ft. The architect is Mr. H. Sudbury, and the contractor Mr. Earnshaw.

METHODIST NEW CONNEXION CHURCH, WALLSEND.—The new Methodist New Connexion Allen Memorial Church, which has been erected in Park-road, was opened on the 27th ult. The general contractor was Mr. W. T. Weir, Howdon-on-Tyne, the hot water heating apparatus has been supplied by Messrs. Emley and Son, Ltd., Newcastle, and the work has been carried out under the superintendence of Mr. Benjamin F. Simpson, architect, Newcastle.

NEW FREE CHURCH, MALVERN LINK.—The new Free Church which has been erected at Malvern Link was opened recently. The new structure has been designed by Mr. H. E. Lavender, architect, of Walsall, and the work has been carried out by Mr. Alfred Holloway, builder, of Malvern Wells. Mr. Thomas Jones has been responsible for the masonry portion. The gas fitting has been done by Mr. J. Edwards and Mr. J. Hall, and the grounds have been laid out by Messrs. J. Lewis and Son, Newtown Nurseries. The cost, including site, has been 3,500*l*.

NEW WESLEYAN CHURCH, WOKING.—The memorial stones of a new Wesleyan church,

which is to be erected on a site in Commercial-road, Woking, were laid recently. The work is being carried out, from the plans of Messrs. W. J. Morely and Son, architects, Bradford, by Messrs. W. J. Drowley and Co., builders, Woking, at a contract price of 5,320*l.*

NEW MISSION CHURCH, USHWORTH COLLIERY, NORTHUMBERLAND.—The foundation stone of a new Mission Church at Ushworth Colliery was laid recently. Mr. Charleswood, of Newcastle, is the architect for the new building.

MISSION CHURCH, MERRYMEET, LISKEARD.—The foundation stone of a new mission church at Merrymeet, near Liskeard, was recently laid. The new building has a seating capacity of eighty persons, and the cost will be about 650*l.* Mr. J. Samson is the architect.

NEW WESLEYAN CHAPEL, BURNLEY.—The foundation stones of a new Wesleyan chapel, which is to be erected on a site in Manchester-road, Burnley, were laid recently. The new building is intended to seat over 700 people, and the cost is estimated at between 7,000*l.* and 8,000*l.* There will be a chancel, organ-chamber, vestries, etc., and a spire, rising to a height of 120 ft. The plans for the work have been prepared by Mr. W. A. Waddington, architect, of Manchester.

CONGREGATIONAL CHURCH, WEDNESBURY.—Foundation stones of a new Congregational church in Walsall-road, Wednesbury, were laid recently. The new building is to accommodate 600 persons, and the cost, inclusive of site, will be 4,280*l.* The work is being carried out by Messrs. Hammond Brothers, Darlaston, from the plans of Mr. C. W. D. Joynson, architect, Wednesbury.

CONGREGATIONAL CHURCH, BELFAST.—The opening of the John White Memorial church, which has been erected in Tennent-street, Belfast, took place recently. The walls of the building are of red brick, with dressings of Giffnock stone. The principal elevation is towards Tennant-street, and contains the two main entrance doorways, one opening into a vestibule in the centre of the front, and the other into a square tower at the south corner of the front. The doors at these entrances have been hung with patent double-action swing hinges. The tower, 12 ft. square inside, will be used as a vestibule on the ground floor, and will contain the stairs to a future gallery. Opposite the tower entrance is a 3-ft. doorway leading to a corridor, off which are the minister's vestry and lavatory, a second door opening from the vestry to the church for the convenience of the officiating minister. Beyond the vestry is the heating chamber, which is on a lower level, and is reached from the side passage at the south of the buildings. The woodwork used in the joinery is pitch-pine, the roof trusses being of the same material. The church is ventilated by means of Boyle's inlet wall tubes, the foul air being drawn away at the ceiling level through metal tubes by one of Boyle's exhaust ventilators. The church is heated by high-pressure hot-water pipes, installed by Messrs. Musgrave. The windows are glazed with leaded glass by Messrs. Campbell Brothers. The plumbing work has been carried out by Mr. Stone, Belfast; whilst Mr. George Jones, Belfast, executed the wrought-iron work; and the painting and decorating has been done by Mr. M'Kelvey, Belfast. The contractors in charge of the entire work were Messrs. C. and W. M'Quoid, and the architect was Mr. John Seeds, both of Belfast.

MISSION ROOM, ST. BRIDGET'S PARISH, WAVERTREE, LIVERPOOL.—The foundation stone of the new mission room, in Grosvenor-road, for the parish of St. Bridget's, Wavertree, was laid recently by Mr. J. H. Stock, M.P. The new building will comprise a hall to accommodate 400, and will include a small hall. The building will be heated by low-pressure hot water, and the ventilation will be carried out by means of Tobin's inlets in the walls and extractor on the roof. The building is being carried out from the plans of Mr. Frank Rimmington, of Liverpool, the contractors for the work being Messrs. Bullen Brothers, of Liverpool.

SCHOOL, RANMOOR, SHEFFIELD.—A new school has been erected at Ranmoor, from the designs of Messrs. Holmes and Watson, architects of Sheffield. When the whole school is completed it will consist of eleven class-rooms, but at present only eight are built, three being left out on the south side for future extension. The entrances to all the departments are from Fulwood-road, two being provided on the east side for the boys, and two on the west for the girls and infants, sloping pathways being provided in preference to steps for the smaller children. There is a central hall, but at present it is divided by a fixed screen glazed with plate-glass, so as to make two large class-rooms. One of the class-rooms has been fitted up as a cooking-room for the girls, a special cooking-range and small pantry, with other fittings, being provided. The four entrances communicate direct with the large hall, but are so arranged as to keep the departments separate. The heating scheme has been carried out by Messrs. Wright Bros., of Attercliffe. Private rooms are provided for the head and assistant teachers. A caretaker's house, with separate yard and outbuildings, is provided near the Fulwood-road. The contract for the erection of the schools has been carried out by Messrs. Wilkinson and Sons, of Heeley.

NEW BOYS' GRAMMAR SCHOOL, BINGLEY, YORKSHIRE.—The Governors of the Grammar School Trust have decided to erect a new school for boys at Bingley, on a site immediately adjoining the present school. Plans have been prepared by Mr. W. R. Nunns, architect, Bingley, for a building providing accommodation for seventy-five boys, at an estimated cost of about 3,600*l.*

PROPOSED NEW BOARD SCHOOL, EDINBURGH.—On the 4th inst. Sheriff Henderson conducted a public inquiry in the Edinburgh School Board Offices at the instance of the Scotch Education Department in regard to the compulsory acquisition of a site for a new school in Upper Gilmore-place. Mr. J. A. Carfrae, the architect, said it was proposed to erect a building to accommodate 1,500 pupils, and in that case the building would require to be three stories.

BAPTIST SUNDAY SCHOOLS, LOUGHBOROUGH.—The new Sunday-school buildings, erected at a cost of about 3,500*l.*, in connexion with the Woodgate Baptist Church, Loughborough, were opened recently. The new schools have been built on the site of the old chapel and burial ground, and extend from the new chapel yard through to Southfield-road. The style is late Gothic. The exterior is of sand-stock bricks, from Messrs. G. Tucker and Sons' yards, with terra-cotta dressings supplied by the Hathern Terra-Cotta Company. Messrs. Barrowcliff and Allcock were the architects. The main entrance to the schools is from the chapel yard in Woodgate. Here there are entrances and cloak-rooms for the boys and girls, divided by an office to be used by the secretary and librarian. These entrances lead direct to the assembly hall, a room 52 ft. by 35 ft. It is lighted by clerestory windows on either side, and a tracery gable window at the Southfield-road end. The roof is of open timbering, and a wood panelling extends round the hall to a height of 3 ft. On either side of the hall, and opening directly into it, are classrooms, and the gallery at the chapel end communicates with the old classrooms, making, in all, seventeen of these rooms available for class work. The two classrooms at the Southfield-road end of the hall are separated by a movable partition, enabling the two to be used together when required. The infant scholars will enter the school from Southfield-road, their room, 23 ft. by 20 ft., adjoining the entrance. Also opening out of the assembly hall is a ladies' parlour, 17 ft. by 15 ft., and a kitchen. A separate entrance from the yard communicates with the kitchen and ladies' parlour adjoining. At the rear of the chapel is a lecture hall, 42 ft. by 21 ft., with open timbered roof and tracery panels. An electric-light installation has been put in ready for the public supply, when that is in operation. The contract for the building was placed in the hands of Messrs. W. Corah and Son.

INFECTIOUS DISEASES HOSPITAL FOR WOODHOUSE AND KIVETON PARK, NEAR SHEFFIELD.—A new infectious diseases hospital has been erected on the Rotherham and Clown High-road, between the villages of Swallow Nest and Aughton. The new hospital consists at present of five blocks—the administrative block, a large three-storied building intended to house the matron and nursing staff, the surgery and dispensary, and other offices; a scarlet fever block, a typhoid fever block, an isolation block, and the laundry. The ward blocks and the laundry are one-storied buildings, placed a sufficient distance apart. The wards and service rooms have mosaic floors, and the wards rounded angles between floor and walls. The walls are uniformly dadoed in chocolate, and painted a neutral green above. For the artificial lighting there is an installation of acetylene gas generators, distributing pipes and burners. The ward accommodation is for thirty-two beds, of which the larger proportion are in the scarlet fever block, and the smaller in the typhoid block. The architect for the hospital is Mr. J. D. Webster, Sheffield.

ALMSHOUSES, YARDLEY.—The new almshouses which have been erected on a site near Yardley Church, Yardley, by the Charity Governors, were formally declared open on the 2nd inst. The houses, six in number, have been erected to replace the old almshouses which adjoin the church. They are self-contained, and comprise a sitting-room, bedroom, scullery, pantry, and outbuildings, all on the ground floor. They have been placed three on each side of a large square grass plot, which is open to the road leading past the church in the direction of Stechford. At the far side of the square, away from the road, is a building comprising a common room, and a dwelling-house for a nurse-matron. The buildings, which have cost 3,000*l.*, have been erected by Mr. H. Gregory, of Olton, to the plans of Messrs. Peacock and Bewlay, architects, of Birmingham.

WOMEN'S HOSPITAL, BIRMINGHAM.—On the 20th ult. the foundation stone was laid of a new hospital for the Birmingham and Midland Hospital for Women. The site of the building is situated in Showell Green-lane, Sparkhill. The new hospital will, in the main, be a two-story building of brick. In the centre is the administrative block, having on the ground floor an entrance hall and corridor 7 ft. in width, from which are approached on the one side matron's office and store kitchen, servants' dining-room and kitchen, offices, and stores, and on the other side doctors' room, matron's sitting-room, nurses' dining-room, with pantry and room for patients' visitors. On the first floor, approached by two fire-resisting staircases, are bedrooms for the matron, lady doctors, and other officers, servants' cubicles, sick-room, linen-room, with bathroom annexe for officers in the centre, and for servants at each end of the corridor. A few rooms for servants are also provided on the second floor. At the back of the administrative block are placed four ward units, two on each floor, having a total provision for forty-eight beds, and which are approached on the ground floor by a central corridor from the administrative block. Leading out of the corridor are a dispensary, surgical store, store-room for patients' clothes whilst they are in the hospital, sewing-room, mattress store, and a sitting-room for the sister in charge of the floor, with an easy-going fire-resisting staircase, enclosing an electrically-worked lift, capable of taking a patient in bed, attended by nurses. The staircase and lift run from the basement to the first floor. On the first floor, immediately opposite the lift, is the operating department, consisting of an anæsthetic room, two operating-rooms, and sterilising-room, and a sitting-room for the sister in charge. Each ward unit contains an associated ward for ten beds, with an isolation ward for two beds, duty-room, pantry, a room for washing mackintoshes, and two sanitary annexes placed cornerwise, with balcony between, from which there is a fire escape staircase to the ground, and also a bathroom placed near the main staircase in which patients will be received before being taken into the wards. The ward buildings are to be constructed on piers and arches allowing of a free air space below the ground floor under the whole area of the buildings, as a protection against damp and ground air. A narrow balcony will run along each side of the wards on the first floor, giving patients an opportunity of sitting in the sun, and also affording a means of cleaning the windows on the outside. The wall and ceiling surfaces throughout these buildings will be painted with a special enamel paint on plaster, and care is being taken, as far as possible, to avoid corners for the harbouring of dirt. At the south end of the administrative block is placed a detached nurses' home containing, on three floors, twenty nurses' bedrooms, three sisters' bedrooms, sick-room, and, on the ground floor, a recreation-room, small kitchen and pantry, bathrooms, etc., and a staircase at the end of the corridor. At the north end of the administrative block is a detached building for the laundry and engineering departments containing, on the basement floor, boiler and engine room, fitted up with complete plant for an electric-lighting installation, together with room for accumulators and steam disinfecting-room; on the ground floor there are a wash-house and a laundry, with up-to-date machinery, and delivery and receiving rooms; also a mortuary consisting of post-mortem room and friends' waiting-room. The administrative, ward, and laundry buildings are connected below ground by a subway in which will be carried the steam, water, and gas mains, and electric cables. The convalescent home will be a two-story building, containing on the ground floor an entrance and corridor leading to the day-room, dining-room, matron's sitting-room, kitchen with larder, pantry, and scullery, and also a room for patients' clothes, bathroom, etc. On the first floor there will be two dormitories for patients, each containing five beds, two for two beds, the matron's bedroom, linen-room, and sanitary annexe. There will be from the first to the ground floor an external iron fire escape staircase. The architects are Messrs. Martin and Martin, of Birmingham. The builder is Mr. C. Gray Hill, of Coventry; and the clerk of works Mr. Frank Hopkins.

ALTERATIONS TO THE IMPERIAL HOTEL, DUBLIN.—The alterations to the Imperial Hotel in Lower

Sackville-street, Dublin, have now been completed. The general contractors for the building were Messrs. H. and J. Martin, Ltd., Grand Canal-street; sanitary fittings, cooking, and heating are by Messrs. W. Baird and Sons, Lower Abbey-street; the ceramic mosaic was executed by Messrs. G. Wolliscroft and Co., Hanley; the steel bridge, life enclosure, wrought iron, and balcony, and ornamental ironwork over entrance were manufactured by Messrs. J. and C. M'Gloughlin, Ltd., Dublin; the electric installation is by Messrs. W. Coates and Sons, of Dublin and Belfast; and the lift is by Messrs. Waygood. It is intended to erect a canopy over the hotel entrance, and this is in the hands of Messrs. Fagan, of Dublin. The painting and decorations throughout have been executed by Messrs. W. Sibthorpe and Sons, Dublin. The work has been executed from the designs and under the supervision of Messrs. Ashlin and Coleman, architects, Dublin.

PUBLIC BATHS, OLD TRAFFORD, MANCHESTER.—At Old Trafford the formal opening took place recently of the baths which have been built by the District Council of Stretford. The new building is in Northumberland-road, and Mr. Ernest Woodhouse, of Manchester, was the architect, Mr. William Thorpe, of Cornbrook, being the builder. The new buildings comprise a swimming bath for men and one for women, as well as provision for douche, vapour, and warm baths. In the construction of the men's swimming bath the architect has made provision for the accommodation of the public on gala nights. The principal bath is 75 ft. by 30 ft.

BATHS, LIVERPOOL.—The members of the Baths Committee of the Liverpool Corporation made, on the 2nd inst., their annual inspection of some of the public baths and washhouses under their control, and opened a new bath in Lister-drive, Green-lane. The site in Lister-drive extends to 6,000 sq. yds. of land, and the buildings cover 1,986 sq. yds. The building line is set back on the Lister-drive frontage a distance of 100 ft. The building has a red stone base, the superstructure being faced on the principal elevations with red pressed bricks with white stone dressings. The baths are approached from an entrance on the Lister-drive front. From the entrance hall there is direct access to the several sections and classes of baths, which are all situate on one floor level. Each section has its waiting and cooling-rooms. The first-class accommodation provides for eight private baths, slippers, sprays, Russian, and vapour baths, and a swimming bath 60 ft. by 30 ft., having dressing accommodation for fifty to seventy-five bathers. There is a balcony at one end. The plunge bath is designed so that it may be used as a gymnasium during the winter months. The second-class accommodation provides for fifteen private baths, slippers, sprays, Russian, and vapour baths, a swimming bath, 75 ft. by 35 ft., with dressing accommodation for seventy-five to 100 bathers. This bath is designed for an entertainment bath, but for the present the necessary spectators' gallery has been omitted. The ladies' section is capable of accommodating six bathers. Space has been reserved for the construction of a ladies' swimming bath when the demand justifies such a provision. A bicycle stable is provided for the storage of bathers' bicycles. There is also a room for swimming-club meetings. The administrative department includes a power-driven laundry and complete installation of up-to-date heating appliances, both for atmospheric and water heating. A superintendent's house is attached to the building. All the baths are top-lighted. The artificial lighting is electric, the current being supplied from the Corporation mains. The interior of the walls are faced with enamelled bricks, tiles, and faience. The water-supply is from the Corporation's fresh water mains. The total cost of the establishment of the baths is 24,000*l.* The establishment was designed by and constructed under the supervision of the baths' engineer and chief superintendent, Mr. W. R. Court, who had the Corporation surveyor (Mr. Thomas Shelmerdine) associated with him in the external architectural treatment of the building. Mr. Isaac Dilworth, of Wavertree, executed the building contract, and Messrs. Thomas Bradford and Co., the engineering contract. The electrical equipment was carried out by the Corporation Electric Power and Lighting Committee.

BOYS' HOME, NOTTINGHAM.—A new home for boys has been opened in Cranmer-street, Nottingham, as a memorial to General Gordon. It has been built to the plans of Mr. Ernest R. Sutton, and is designed to accommodate eighty boys. On the basement floor are cloak-rooms, bathroom, day lavatories, boot-cleaning and brushing rooms, while on the ground floor there are the dining-hall, capable of accommodating 400, with kitchen, scullery, plates, dishes, and washing-up room adjoining. The committee room and waiting room are situated on the south side of the main entrance from Cranmer-street, and the office and master's and matron's rooms on the north. The first and second floors are devoted to dormitories and bedrooms for the boys and the staff, with bathroom accommodation, and there is a hospital on the second floor, with separate offices. Low-pressure hot-water pipes and radiators are utilised for heating, and ventilation flues and extractors for the internal ventilation. The staircases are of stone throughout, and a fire-escape staircase is provided from the dormitories. In the yard there are bath-chair, cart, and barrow houses, and the usual out offices, and a play and drill ground are provided. Externally the walls of the home are of red brick with Derbyshire stone dressings.

PUBLIC-HOUSE, SHEFFIELD.—The Sheffield Corporation, in carrying out their scheme for widening Westbar, Gibraltar-street, and Infirmary-road, had to deal with a lot of licensed property, and the City Council decided to allow over a dozen licences to lapse. All these were situate on the main road. The "George IV." was one of those preserved, and the site was secured by a number of gentlemen who formed themselves into a public-house trust company. The new house has been erected by Messrs. Ash, Son, and Biggin, to designs drawn by Mr. H. I. Potter, Sheffield. The new building is divided into two parts, one for the purposes of the hotel, and the other for private apartments and conveniences for the manager. The corridors and staircases are provided with glazed brick dados, and many of the floors are mosaic, laid by Messrs. Hodkin and Jones.

BUSINESS PREMISES, NORWICH.—Building operations have just been commenced on a new block of offices in Orford-place, Norwich. The architect is Mr. J. Owen Bond, and the contractor Mr. T. Gill, both of Norwich.

ALTERATIONS, LEEDS TOWN HALL.—In order to provide better accommodation for the town clerk's staff at the town hall, Leeds, it is proposed to utilise the lead flat adjoining the corridor of the West Riding police-court and the upper portion of the Victoria Hall. A plan has been prepared by the City Engineer, Mr. Thomas Hewson, and approved by the Corporation, which provides three offices, with two entrances, one from the corridor adjoining the West Riding police-court and the other from the corridor leading to the gallery. The rooms will be divided by pitch-pine woodwork and glass, and a north light will be obtained by the City Engineer's scheme. The roofing will be supported by girders carried on existing walls inside the building.

CARRICK HOUSE, BELFAST.—The new wing which has been added to Carrick House, Belfast, was opened on the 9th inst. The new building stands on a site in Unity-street, and provides sixty-eight additional cubicles. Messrs. M'Dowell, Leathem, and Fraser, Belfast, were the general contractors; the heating arrangements were entrusted to Messrs. Musgrave and Co., Ltd. Mr. Richard Kernaghan was responsible for the sanitary arrangements; Mr. J. Bradin put in the electric wires; and Mr. J. B. Nelson supplied the asbestos covering for the boilers. The work has been carried out from the plans of Mr. James Munce, the assistant City Surveyor.

BUSINESS PREMISES, SHEFFIELD.—New business premises are in course of erection on a site at the corner of Church-street and Orchard-street, Sheffield. The new building is of brick with stone dressings. Messrs. Gibbs and Flockton are the architects, and the contractors are Messrs. Dawson, Jones, and Co.

NEW HOME FOR THE BLIND, SOUTHPORT.—The foundation stone of a Home for the Blind, which is to be erected in Roe-lane, Southport, was laid recently. Mr. John Brooke is the architect, and the cost of the work will be about 5,500*l.*

CO OPERATIVE BRANCH, WINLATON, NORTHUMBERLAND.—A new branch of the Blaydon Co-operative Society has been opened at Winlaton. Messrs. Davidson and Bolam, of Blaydon, were the principal contractors for the work, the architect being Mr. F. M. Dryden, of Newcastle.

WORKHOUSE HOSPITAL, BURY.—At Bury, Lancashire, on the 12th inst., Councillor David Healey, of Heywood, and Councillor James Cunliffe, of Radcliffe, laid the memorial stones of a new hospital wing to be erected by the Bury Union at their workhouse. The new hospital scheme is estimated to cost 30,000*l.*, and provides for 200 patients. At present only the administration block and two pavilions are being erected, finding accommodation for 126 infirm persons and seventeen nurses. Mr. A. Hopkinson is the architect.

DRINKING FOUNTAIN, BROCKWELL PARK.—The London County Council has given permission for the erection of a drinking fountain in Brockwell Park, to the memory of Alderman S. Horace Candler, Vice-Chairman of the recent extension scheme, who died shortly after the 42½ acres were rescued from the builders' hands. Mr. C. E. Tritton, M.P., Chairman, and Mr. Albert Larking, Hon. Secretary, of that scheme, have the matter in hand, with Mr. W. C. Parsons, of 51, Loughborough Park, the Treasurer. The fountain is to have a circular grey granite base, surmounted on two octagonal steps, with four red granite columns above, and furnished with Portland stone pediments. There will also be side panels with inscriptions engraved thereon, and one with a portrait medallion of Mr. Candler in bronze. It has been designed and will be carried out from drawings prepared by Mr. Arthur W. Sheppard, architect, by Messrs. J. Whitehead and Sons.

NURSES' HOME, TROON.—On the 16th inst. the new home, erected at a cost of 1,300*l.*, in Barassie-street, Troon, for the nurses of Troon District Nursing Association, was opened. Mr. Hay was the architect for the building. The home is a two-story building, and is provided with accommodation for two nurses, dispensary, etc.

WORKMEN'S INSTITUTE, WATERSIDE, AYR, N.B.—A new workmen's institute has been opened at Waterside. The new building occupies a central site in the village, on rising ground. It has been designed with steep pitched roofs and overhanging eaves and gables, and the lower sills are of red pressed brick, the upper walls finished in rough cast of a cream yellow tint. The two sections of walls are divided by a moulded stone course, which is returned round under the windows, forming a sill course. The step roofs are covered with light sea-green slates, finished with red tile ridges, and the whole external woodwork has been painted in a soft green shade. The building has been designed and erected under the superintendence of Mr. John B. Wilson, architect, Glasgow, and the work has been executed by the following contractors:—Mason and brick, Mr. J. M'Connachie, Dunaskin; wright, Mr. Quintin Clark, Ayr; plumber and slater, Messrs. Auld and Sons, Ayr; plasterer, Mr. Falconer Elder, Kilmarnock; painter, Mr. William Anderson, Kilmarnock; electric lighting, Messrs. Mavor and Coulson, Glasgow.

STAINED GLASS AND DECORATION.

WINDOW IN THE INDUSTRIAL HALL, BRADFORD EXHIBITION.—In the west window of the Industrial Hall of the Bradford Exhibition a stained-glass window representing a figure symbolical of labour has been placed. The figure is 10 ft. high, and the span of the wings 35 ft. The colouring is in a scheme of ruby, blue, and green. The window was executed by Mr. W. Pope, of Leeds, from a design supplied by Mr. Arthur Louis Duthie.

MEMORIAL WINDOW, ALFRISTON, SUSSEX.—A stained-glass memorial window, which has been placed in the parish church of Alfriston, was recently unveiled. The window consists of a central figure representing the glorified Christ, supported by four figures of saints in the principal lights. The window is the work of Messrs. James Powell and Sons, of London, after a design of Mr. Charles E. Powell, architect, also of London.

PRESENTATIONS.

TO MR. HOWARD COLLS.—The important ancient lights case of Colls *v.* the Home and Colonial Stores, Ltd. (which was decided in the plaintiff's favour in the House of Lords on the 2nd inst., and reported in the *Builder* on the 7th and 14th insts.), has attracted considerable public attention. The first substantial recognition of Mr. Colls's public spirit in the matter has come from the Institute of Builders, of which Mr. Colls is a member, in the form of a massive silver-gilt Georgian bowl, with a suitable inscription. The presentation was made without ceremony at Mr. Colls's private residence.

TO MR. LOWRY.—At the Queen's Hotel, Stockton-on-Tees, recently, Mr. Wilkinson, President of the Northern Counties Federation of Building Trade Employers, on behalf of that body, presented Mr. Walter Lowry, of the firm of Messrs. J. and W. Lowry, of Newcastle, with a silver and gold bowl and stand in appreciation of the great services rendered by him to the building trade for many years, as well as a mark of the esteem in which he is held by the employers of the North of England. Mr. Walter Lowry (who is the eldest son of the late Mr. John Lowry) was for eight years President of the Newcastle, Gateshead-on-Tyne District Building Trade Employers Association, and resigned that position last year. He has also been twice President of the Northern Counties Federation of Building Trade Employers, as well as occupying the presidential chair of the Northern Centre of the National Federation of Building Trade Employers of Great Britain and Ireland.

SANITARY AND ENGINEERING NEWS.

THE GREENLAND DOCK, ROTHERHITHE.—On the 3rd inst. the new Greenland Dock at Rotherhithe, the property of the Surrey Commercial Dock Company, was opened. The works, which were begun in 1894, comprise the new Greenland Dock, the construction of a lock and entrance from the river, a communication passage from the south-east corner of the Canada Dock into the new dock, the extension of the Russia Dock southwards, and the construction of a passage from that dock into the new dock, a new canal lock, and the formation of a basin by widening the canal. The new dock is 2,250 ft. in length by 450 ft. in breadth, covering an area of about 22 acres, with quays 5,380 ft., or upwards of a mile, in length. The entrance lock is 550 ft. in length, 80 ft. in breadth, and has a depth of water on the sill of 35 ft. below T.H.W. The new dock will not be accessible to vessels of the largest class it is designed to admit until the necessary further deepening of the river shall have been carried out. The original plans for the works were prepared by the late engineer of the Company, Mr. J. A. McConochie, M.Inst.C.E., who died before any substantial progress with the works had been made. The Company subsequently entrusted the supervision and control of the works to Sir J. Wolfe Barry. Having in view the possible future requirements of the trade of the Port, the directors, with the advice of Sir J. Wolfe Barry, modified and extended their original plans, increasing the proposed width of the dock by 100 ft. and the length and depth of the entrance lock. Nearly a million sterling has been spent on these improvements. Messrs. S. Pearson and Son, Ltd., were the contractors for the whole of the works, and the construction of the lock gates, bridges, and hydraulic machinery was carried out by Sir W. G. Armstrong, Whitworth, and Co.

WATER SUPPLY, HONITON.—Mr. R. H. Bicknell, M.Inst.C.E., held an inquiry, on the 6th inst., for the Local Government Board, with respect to an application of the Honiton Town Council for sanction to borrow a further sum of 1,150*l.* in connexion with their new waterworks on St. Cyres Hill. It was stated that the population of the town was 3,400. The ratable value was 15,916*l.*, the total rates being 7s. 6d. in the pound. The Clerk said the plans were sanctioned on July 17, 1902, and the tenders were invited. Twenty-one were received, and the one accepted was that submitted by Mr. Gibson, Exeter. It was found that with extras the sum of 5,200*l.* was required for the work.

MISCELLANEOUS.

QUEEN VICTORIA MEMORIAL, BRADFORD.—The statue of Queen Victoria was formally unveiled on the 4th inst. The work was placed in the hands of Mr. Alfred Drury, A.R.A., and the committee who had to deal with the matter came to the conclusion that the idea of fountains and a basin should be abandoned, and that Mr. J. W. Simpson, of London, the architect who was then carrying out the erection of the Cartwright Memorial Hall, should be associated with Mr. Drury in the matter to design some architectural work surrounding and leading up to the large bronze figure of the Queen. The statue is of bronze, and represents the Queen in her robes of state as she appeared about 1887. Her Majesty holds in her hands the sceptre and globe, and she wears a small imperial crown. A widow's veil falls back over her ermine collar. The pedestal rises a few feet above the level of the land immediately behind it, and there is a considerable fall to the level of the ornamental gardens at the foot of the monument. This sudden fall in the ground level has been utilised by Mr. Simpson in the effort to secure dignity for the surroundings of the monument. Short walls run out as wings on either side of the pedestal, terminating in vases, and a short staircase on either side descends to the gardens, where a portion is enclosed within a wall semi-circular in shape, or, rather, segmental, for the semi-circle is not quite complete. On either side of the monument and its architectural surroundings are placed two lions. They are the work of Mr. A. Broadbent, who executed the decorative sculpture at the Cartwright Hall.—*Yorkshire Observer.*

LIVERPOOL ARTISANS' AND LABOURERS' DWELLINGS.—The returns submitted to the Corporation Housing Committee on the 29th ult. by the manager, Mr. John Taylor, now appear in pamphlet form. They give the following among other particulars:—During 1903, 353 additional tenements were completed and opened, providing accommodation for 1,706 persons, thus bringing the aggregate number of tenements to 1,276 (with thirteen shops), capable of accommodating 5,868 persons. The total gross annual rental amounted to 12,564*l.* 5s. 4d., as compared with 8,809*l.* 0s. 8d. on December 31, 1902. The total receipts for 1903 amounted to 10,231*l.* 0s. 5d., of which 9,586*l.* 15s. 8d. was actually collected from the tenements alone, being equal to 95·68 per cent. The average collection from Victoria-square, Juvenal-dwellings, and St. Martin's-cottages was 99·37 per cent., while the average collection from the other dwellings reserved for housing those persons dispossessed, was 93·40 per cent. The total amount lost through empties (inclusive of new dwellings during the year and a number of which were empty for some time after completion) was 1,001*l.* 5s. 6d., equal to 8·88 per cent. of the total rental value. The total expenditure for 1903 amounted to 5,297*l.* 13s. 4d., the details of which are as follows, viz:—Supervision and collection of rents, 539*l.* 1s. 8d.; rates and taxes, 1,934*l.* 7s.; gas and lighting, 529*l.* 19s. 1d.; ground rents, 137*l.* 12s. 8d.; stores, repairs, new work, cleaning, etc., 1,936*l.* 4s. 3d.; fire insurance, 112*l.* 4s.; incidentals, 108*l.* 4s. 8d. The returns also convey a great deal of detailed information as to the classes of people inhabiting the tenements, etc.

CAPE COLONY IMPORTS.—Official statistics show that the imports into Cape Colony in the month ended January 31, 1904, included cement, 7,000*l.*; paints and colours, 8,000*l.*; and wood and manufactures of wood (including furniture and cabinetware), 208,000*l.* The corresponding figures for January, 1903, were 13,000*l.*, 12,000*l.*, and 195,000*l.* respectively.

STREET POSTS IN LONDON.—We observe that the wooden posts at the south end of Great Turnstile, High Holborn, where the footway opens into Lincoln's Inn-fields, have just been reconstructed so that they may be turned upon hinges and laid level with the pavement in a case of emergency. We gather that this has been done in view of the recent fatal fire in the City to which immediate access by a fire engine or escape was obstructed by some posts, and that the same precaution will be adopted in other places where a similar obstruction now exists.

THE CONDITION OF DURHAM CASTLE.—For some considerable time past, it is stated, portions of Durham Castle have shown signs of decay, and, although measures have been taken from time to time to arrest the progress of the mischief, matters have now arrived at such a crisis that it has been deemed wise, on the part of the University authorities, to call in the services of an architect to examine and report. The services of Mr. T. G. Jackson have been secured, and he is now engaged in making an examination into the condition of the foundations of the Castle.

THE CITY SURVEYORSHIP.—The resignation is announced of Mr. Andrew Murray, Surveyor to the Corporation of the City of London, who will retire upon a pension, having attained the limit of age. Mr. Murray entered the service of the Corporation fifty years ago, and, in June, 1899, was elected a Fellow of the Royal Institute of British Architects, having been elected an Associate in 1872. As City Surveyor he carried out many important architectural works for the Corporation, comprising the new City of London Court, near the Guildhall, in 1887-8, of which we published illustrations on December 24, 1887, and which he enlarged in 1893; the Weights and Measures Offices, Guildhall, 1893; the Ward's City of London School for Girls, on Victoria Embankment, 1892-3, having accommodation for 400 pupils; the City police-station, in the Minories, opened in October, 1897; the extension, to include thirty classrooms, of the Guildhall School of Music, in Whitefriars, 1897-8, at a cost of about 21,000*l.*, the school having been first built after the late Sir Horace Jones's designs; an extensive enlargement, in 1898-1901, at a total outlay of 250,000*l.*, of the City of London Asylum, at Stone, near Dartford; the extensions at the Deptford Foreign Cattle Market, together with the new pier and lairages, having a river frontage of 900 ft., also the chill-rooms, cooling-rooms, slaughter-houses, tripe-boiling houses, and so on, for which, begun in 1896, the expenditure has amounted to some 155,000*l.*; the City Mortuary, in Golden-lane, the Shelter, and other buildings, 1899-1900; the Sanitary Hospital, at Denton, near Gravesend, for the Port of London, with the water-tower; the police-station in Moor-lane, E.C., with quarters for sixty-seven constables, clothing store department, and other offices; and, in conjunction with Mr. E. Cruttwell, M.I.C.E., the recent widening of London Bridge. Mr. Murray made the designs for the crematorium at the City of London Cemetery, Little Ilford; the Queen Victoria Memorial, on Victoria Embankment, which also marks the City boundary there; and the restoration, four years ago, of the porch of the Guildhall, erected in 1425. In February, 1899, he was appointed, together with Professor Aitchison, to draw up the instructions for the guidance of the six architects nominated to compete for the new Sessions House and Central Criminal Courts in Old Bailey. Four years ago he made the plans for rebuilding, now in progress, upon the John Carpenter estate belonging to the Corporation on the sites of Alfred-place, the two circuses, and the vicinity, lying between Gower-street and Tottenham Court-road, as originally laid out by George Dance, the younger. After the death of Mr. F. M. Peebles, on May 21, 1891, the titular office of Architect to the Corporation was abolished.

PROPOSED WORKMEN'S DWELLINGS, SHEFFIELD.—On the 11th inst., at the Town Hall, Sheffield, Mr. F. H. Tulloch, Local Government Board Inspector, held an inquiry with reference to the scheme of the Sheffield Town Council for providing a certain number of new dwellings on a site in Clough-road and Edmund-road, and the Council's application to the Board for sanction to borrow the sum of 23,000*l.* for the purposes of the scheme. Mr. W. E. Hart, the Deputy Town Clerk, explained that the scheme was to provide new dwellings for a number of persons of the labouring class, who had been displaced by reason of street widenings, necessitated by tramway extensions, and by the natural growth of the city, and carried out under the powers of the Sheffield Corporation Acts of 1897 and 1900. It was thought that the provision of seventy houses would be sufficient. Difficulty had been experienced in acquiring a site which should be sufficiently central, and obtained at a sufficiently reasonable price. The Clough-road and Edmund-road site had eventually been bought. The area of the land was 8,200 sq. yds., and the price of the purchase, 5,842*l.* 10s., thus averaging about 14s. 3d. per yard. In addition to this, 151*l.* 10s. had to be paid for flagstones and sewers in the adjoining streets, which had been put in by the vendor previous to the purchase, and there were certain other sums, which made a total capital outlay on the land of 6,121*l.* 10s. 6d. The Council proposed to erect four classes of houses. The plans were submitted by the City Surveyor, Mr. F. C. Wike, who said that the estimated cost for the buildings was 15,038*l.* He pointed out, in referring to the site, that the roads were very much higher than the adjoining land. The depth below the road would be about 6 ft., and, therefore, it was necessary to take the foundations a good deal deeper than would have been necessary in ordinary circumstances with cottages of a similar kind. The foundations, however, had been availed of to make coal cellars and larders larger than usual. Each house had a separate yard. The extra foundations added 20*l.* a house to the cost of the houses. Besides, not only had the Council to comply with the Local Government Board requirements and the by-laws, but there were obligations to the vendor with regard to certain building lines and forecourts. In reply to a question, Mr. Wike said the site was the only one the Council could get. It was not one they would have selected if they had been given a freer choice. There were about 87 sq. yds. to each house, and the inclusive cost for each house was about 320*l.* The rent was not yet settled.

CAPITAL AND LABOUR.

A SCHEME TO AVOID STRIKES IN THE BUILDING TRADE.—The Yorkshire Federation of Building Trade Employers have, during the past six months, been considering the best methods of putting a stop, once and for all, to the system of settling labour disputes by strikes and lock-outs, and they have submitted to employers and employees a "Closer Union Scheme." During the past two months correspondence relating to the scheme has been passing between the Yorkshire Federation and the headquarters of trade unions representing the Operative Bricklayers' Society, the Manchester Unity of Operative Bricklayers, the Trade Accident, Sick, and Burial Society, the Amalgamated Society of Carpenters and Joiners, the General Union of Operative Carpenters and Joiners, and the Operative Stonemasons, and it has been well received. The initial stage of the negotiations was brought to a practical test on Monday, when a committee of employers, appointed by the Council of the Yorkshire Federation, met an equal number of representatives (two from each section of the trades) in conference at the North-Eastern Station Hotel, York. The questions at issue were thoroughly discussed in a friendly and harmonious spirit on both sides for nearly three

hours. Mr. E. Good, of Hull, President of the Federation, occupied the chair, supported by Mr. T. Marsden and Mr. J. Townsley (promoters of the scheme), and Mr. W. T. Wilson, of Manchester, representing the Amalgamated Society of Carpenters and Joiners. The scheme, which contains five clauses, was practically agreed to unanimously, and it will be finally considered in June next after a plebiscite of the whole of the operative members interested has been taken.—*Yorkshire Post.*

Legal.

POINT UNDER THE LONDON BUILDING ACT.

THE case of the London County Council *v.* The Illuminated Advertisements Company came before a Divisional Court of King's Bench, composed of the Lord Chief Justice and Justices Wills and Kennedy, on the 13th inst., on the appeal of the London County Council from a decision of Mr. Plowden, the stipendiary.

It appeared from the special case which had been stated that the County Council charged the Company before the magistrate with unlawfully erecting certain structures beyond the general line of buildings without the consent of the Council in writing. The Company, in 1893, erected on the front walls of 45, Cranbourn-street, twelve advertisement cases, constructed of sheet iron, supported by iron supports, cut and pinned through the front walls of the buildings. The outer side of each of the cases was covered with a wooden frame carrying canvas or linen with advertisements, and provision was made for illuminating the interior of the cases by electric light. The cases varied in width from 2 ft. to 5 ft., and in height from 5 ft. to 7 ft. Each of the cases stood out 10 in. in front of the front wall of the building, but such projection was less than the projection of the existing cornice over the shop, which was 2 ft. from the face of the building. The front of each of the cases was about 10 in. beyond the general line of buildings as determined by the certificate of the Superintending Architect of Metropolitan buildings. The Company had not obtained the consent of the Council to the erection of the cases, and the latter body contended that the cases being so fixed and supported were structures within sections 22 and 200 (3) of the London Building Act, 1894, and that the Company became liable to the penalty prescribed by section 200 (3) of the London Building Act, 1894, as amended by the London Building Act (1894) Amendment Act, 1898. The Company contended that the cases were not structures within the Act. The magistrate held that the cases were not structures within the Act, but were excrescences which could be removed without injury to the fabric, and they could not be said to be a "bringing forward" of the main building, as was contemplated by the statute. He accordingly dismissed the summons. Hence the present appeal.

At the conclusion of the arguments of counsel the Lord Chief Justice and Mr. Justice Kennedy held that the point for decision was a question of fact and of degree in each case for the magistrate to decide, and he had decided that the cases were not structures within the Act. They could not say that he was wrong in law in holding that the cases were not structures within the Act.

Mr. Justice Wills differed. He did not think that the magistrate intended the court to deal with the case as if he had found as a fact that the cases were not structures. His lordship could not help feeling that, as long as the cases remained annexed to the building they formed part of it, although they could be removed.

By a majority of the court, therefore, the appeal was accordingly dismissed.

Mr. Horace Avory, K.C., and Mr. Daldy appeared for the appellants, and Mr. Macmorran, K.C., and Mr. Holden for the respondents.

POINT UNDER THE METROPOLIS MANAGEMENT ACT, 1855.

ON the 9th inst., before a divisional court of King's Bench, composed of the Lord Chief Justice and Justices Wills and Kennedy, the hearing of the case of the New River Company *v.* the Mayor, etc., of Westminster, was concluded on the company's appeal from a decision of Mr. Bros, the Metropolitan Stipendiary.

The matter came before the court in the form of a special case, from which it appeared that the company were summoned before the magistrate by the respondents for neglecting to pay a certain sum alleged to be due to the respondents for expenses incurred in filling, making good, and maintaining the pavements in streets in Westminster, when the same had been broken up by the company in pursuance of its statutory powers to execute work in the City of Westminster. The sum which the respondents claimed included a charge of 10 per cent. on the cost of the work, to cover the respondents' estimate of the expense to which they had been put for superintending the work during its execution by a contractor. The company's contention was that, by virtue of section 114 of the Metropolis Management Act, 1855, the respondents were not entitled to make any charge for supervision or superintendence, notwithstanding that it was given, and that the same formed part of the general administrative duties of the respondents. The respondents, on the other hand, contended that the employment of officers to superintend and supervise such work was a necessary expense incurred by the Corporation in carrying out the work of reinstatement. The magistrate came to the conclusion that the respondents were entitled to recover a sum for the expenses incurred in respect of the supervision or superintendence of the work, but he reserved the question of amount, and as to how it should be calculated, pending the opinion of the High Court as to whether the respondents were, in law, entitled to make any claim in respect thereof.

At the conclusion of the arguments of counsel, the Lord Chief Justice, in giving judgment, after going through the various Acts of Parliament bearing on the subject, said that, dealing with the matter in a practical way, he was of opinion that all work properly done in reinstating the street came within the meaning of expenses. The magistrate had held that the respondents were entitled to recover the expenses in question, and his lordship saw no reason for interfering with his decision.

Justices Wills and Kennedy concurred, and the case was remitted to the magistrate for him to determine the amount to which the respondents were entitled.

Mr. Courthorpe Munroe and Mr. E. Jelf appeared for the appellant company, and Mr. Morton Smith for the respondents.

ARCHITECT AND SURVEYOR'S ACTION FOR FEES.

THE case of Stenning *v.* J. Mitchell and Co. came before Mr. Justice Farwell, sitting as an additional Judge of the King's Bench Division, on the 11th inst., an action by the plaintiff, Mr. A. R. Stenning, an architect and surveyor, for 166*l.* 19*s.*, fees for services rendered to the defendants in connexion with the taking over by the London County Council of property belonging to the defendants in Drury-lane under the Lands Clauses Acts.

Mr. H. F. Dickens, K.C., and Mr. H. Smith appeared for the plaintiff, and Mr. Ernest Pollock for the defendants.

It appeared from the statement of Mr. Dickens that in 1900 the defendants, on receiving notice to treat under the Act, retained the plaintiff as their leading surveyor, so that he should have the conducting of the matter throughout. Negotiations continued from February, 1900 to 1902, but afterwards the parties went to arbitration, and in March, 1902, the arbitrator issued his award, awarding Messrs. J. Mitchell and Co. 18,195*l.* compensation. According to Ryde's scale, plaintiff's fees for his ordinary duties as a surveyor in the case amounted to 109*l.* 4*s.* It was admitted, however, that, apart from the ordinary work which surveyors usually did in these cases, the plaintiff did a large amount of extra work, for which he made a charge of fifty guineas.

The plaintiff gave evidence that his charges were reasonable and proper in the circumstances, and called Mr. George Wilkinson, a member of the firm of B. A. Wilkinson and Son, surveyors, of 7, Poultry, E.C.; Mr. B. A. Breach, a member of the firm of Fairbrother, Ellis, and Co., of Fleet-street; and Mr. H. A. Hunt, a surveyor, all of whom said that the plaintiff's charges were reasonable, having regard to the work he did and his eminence in the profession.

The defence was that plaintiff's charges were unreasonable, and defendants paid a sum of money into court as being sufficient to meet the plaintiff's claim.

Defendants called no evidence, and, counsel on both sides having addressed the court, his lordship, in giving judgment, said the question for decision was one purely of fact on the circumstances of the case—viz., what was a fair and reasonable remuneration to be paid to the plaintiff by the defendants for his services. No custom was alleged, nor was any express agreement stated or proved, nor, so far as he had heard, was Ryde's or any other scale mentioned when plaintiff was engaged. Nothing was said about remuneration. Ryde's scale had certainly not been established as the customary scale upon which surveyors could insist upon receiving. He thought he might say it was a scale which surveyors usually desired to receive. In the present case, what he had to consider was a reasonable amount to give the plaintiff. To some extent he quite agreed it was very undesirable to pay by percentage on the amount, but, owing to the exigencies and the difficulties of business, it was the practice usually adopted by the court in taxation. So that he was bound to accept that as the proper mode of ascertaining remuneration. It did not at all follow that, because he thought that in this case Ryde's scale applied, it was always applicable. Far from it. He had to consider the work done in each particular case. In the present case there were three heads of work to be considered—first, there was the ordinary work done by the surveyor witness; secondly, there was the work which he did in a *quasi* consultative capacity in preparing the evidence, advising, negotiating, and trying to settle so as to avoid litigation; thirdly, there was work which the plaintiff did in connexion with alternate sites suggested instead of money compensation. Three sites were proposed by the London County Council and one by the plaintiff, and these were advised on by the plaintiff. As regarded the preliminary advising and the ordinary surveyor's evidence at the arbitration, having regard to the special circumstances of the case and to the length of time to which the matter extended, his lordship thought a reasonable sum to allow the plaintiff on that head was that specified in Ryde's scale. For the extra work which the plaintiff had done, he allowed forty guineas more.

Judgment for the plaintiff accordingly.

ACTION AGAINST A CONTRACTOR.

IN the Court of Appeal, composed of the Master of the Rolls and Lord Justice Romer, on the 9th inst., Mr. Clavell-Salter, K.C., applied *ex parte* on behalf of the defendant in the case of the Teignmouth District Council *v.* Slocum for leave to appeal from an order made by the Judge in Chambers affirming the Master, referring the action to Mr. Hemming, the Official Referee, the defendant desiring to have the action tried before a Judge and jury at the next Exeter Assizes. The learned counsel said that in 1898 the defendant had a contract to reline the reservoir at Teignmouth. He did the work under the supervision of the plaintiffs' engineer, and he apparently was satisfied with the work and gave the defendant the usual certificate on completion, and the defendant was paid. In October last defendant received a letter from the clerk of the District Council saying that it had been found that the work had been scamped. There was a clause in the contract which enabled the plaintiffs to reopen the matter at any time, notwithstanding the certificate for completion. The plaintiffs then brought the present action against the defendant for damages amounting to something over 2,500*l.* There was no charge of fraud against the defendant, but the allegations of the plaintiffs were that the concrete was not of the thickness shown on the plans, that the concrete was of bad quality, that the bricks used were of bad quality, and that the reservoir was not water-tight. The contract, which was in writing, had been verbally altered from time to time. It must be assumed, said the learned counsel, that the reservoir leaked, but the defendant's case was that that was not due to bad workmanship or to the use of bad materials, but was due to the soil in which the reservoir was made. He submitted that the defendant was entitled to have the case tried before a Judge and jury at the next Assizes at Exeter, which would be more speedy and less expensive than an inquiry before the Official Referee.

In the result, their lordships held that they could not interfere with the discretion exercised by the Judge and Master, and dismissed the application.

DEFINING A SCAFFOLD.

AT the Hull County Court on the 27th ult. his Honour Judge Raikes, K.C., sitting as arbitrator under the Workmen's Compensation Acts, heard a case of importance to the building trade.

The applicant, William Young Wrightson, for whom Mr. W. C. Dawson appeared, claimed compensation from Mr. Frank Southern, of Wright-street (who was represented by Mr. W. H. Owen, barrister-at-law, Hull, instructed by Messrs. Barker and Mayfield), in respect of injuries sustained by him in consequence of an accident which happened on August 31st last year.

Mr. Dawson, for the applicant, stated that

at 6.30 on the morning of the day in question the applicant, along with other workmen, was told off to repair the roof of some premises in Wright-street. They selected ladders and scaffold ropes for the purpose. A large ladder had been erected, and was being secured by ropes to the palisadings in front of the house, two smaller ladders which were to be used being on Southern's premises ready to be carried across. The ladder was blown down by a heavy gust of wind before it was properly secured, and the applicant was seriously injured.

Several witnesses, including Mr. Emerson, a delegate from the Bricklayers' Society, and Mr. Tighe, a delegate from the Builders' Labourers' Society, gave evidence that a combination of three ladders as described, when erected, was known in the trade as a "roof scaffolding."

Mr. Owen, for the respondent, argued that this combination of ladders, if completely erected, would not form a scaffold within the meaning of the Act, and even if it did, as there was only one ladder actually on the job and erected, it could not alone be a scaffold.

For the applicant Mr. Dawson argued that a scaffolding, according to the decision of the House of Lords in Hoddinott *v.* Newton Chambers, included any arrangement of ladders or poles, and even a pair of steps appropriate for use on the particular repairs being carried out, and that for the purpose of the Act a ladder by itself might be held to be a scaffolding. To send up other ladders and to lash them to the first was a contrivance appropriate for the repair of a roof, and was a scaffolding within the Act. The fact that all parts of the scaffolding were not actually on the premises was immaterial, as it was the intention of all parties to take them there, and the repairs were actually carried out in this way after the accident. The ladder was part of the scaffolding, and as soon as it was brought on the premises the repair of the building had commenced, and the applicant was within the Act.

His Honour, in giving judgment, found that the arrangement of ladders described (and of which evidence had been given that such a contrivance was usually employed for the repair of a roof) was a scaffold within the meaning of the Act. Whilst at the time of the accident the scaffolding was not erected, yet it was in process of erection. It did not matter whether all the materials for constructing the scaffolding were actually on the premises or not. The repair of the building by means of scaffolding within the meaning of the Act had commenced at the time of the accident, and he awarded the applicant half wages from the date of the accident, and costs.—*Eastern Morning News.*

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

8,592 of 1903.—R. E. ATKINSON: *Steam and Hot-water Heating Systems.*

A steam or hot-water heating system. The return main is provided of the smallest diameter at the point of connexion to the set of radiators or the like nearest the boiler, or other source of heat, and of increasing diameter at the succeeding points of connexion to the other and farther sets, being of largest diameter at the point of connexion to the most remote set of radiators, from which point the return main is continued of such large diameter to the boiler; the slope or fall of the return main being also arranged to be from the point of connexion to the nearest set to the boiler, downwards to the point of connexion to the most remote set.

9,894 of 1903.—W. JOSTEN: *Domestic Stoves and other Fireplaces.*

A domestic stove or fireplace, comprising in its construction a movable grate connected with an adjustable balance-lever or spring, a movable fuel receptacle, divided into compartments, and a locking and releasing mechanism adapted to control the motion of the fuel receptacle, the whole being so arranged and constructed, that when the weight of the fuel on the grate has fallen to a given limit, the grate will rise and act on the releasing mechanism, in consequence of which, the fuel receptacle will advance a given distance, and the fuel contained in one of the compartments will slide down upon the grate.

11,463 of 1903.—R. E. LEETHAM: *Outlets or Exits for Inclined Storage Compartments or Floors.*

This consists in the combination with a gravity delivering storage compartment of a hinged trap, so arranged that it serves to block the passage of a series of packages placed in the compartment until released, and upon its release permits the packages to pass at suitable intervals, the passage of a package being utilised to restore the position of the trap so as to block the next succeeding package until the first package has passed forward, the trap being afterwards released so that the second package may then commence to pass on, and so on as long as required.

11,469 of 1903.—C. W. A. TAYLOR and J. STOREY: *Hoists.*

A hoist, having a lifting cylinder with sliding piston therein, and a standing sheave mounted internally therein on a driving shaft, consisting in the combination therewith of a pipe, located parallel to the lifting cylinder, a running sheave attached to the piston, a length of chain or rope attached to one end to a fixed point, and passed under the running sheave to the standing one in such a manner as to increase the speed of the driving shaft and the travel of the load, while at the other it hangs down in the pipe, and is provided with a balance weight, so arranged as to keep the said chain in engagement with the sheave, and avoid having to coil it upon a drum as hitherto.

13,739 of 1903.—H. E. BADEN: *Lavatory Basins.*

This consists in the combination of a basin, an overflow pipe, a chamber in communication with the basin and pipe, a lever in the chamber, a valve pivoted to the lever, and closing the communication between the basin and the chamber, and a rod passing down the overflow pipe, and pivoted to the lever.

14,395 of 1903.—R. H. HEPBURN: *Metallic Roof and Wall Tiles and Slabs, or Shingles and the like.*

A tile or shingle, having at an intermediate position between the upper and lower edges a transversely directed hooked or inverted U-sectioned channel or recess, whose mouth or entrance is open to the top or upper side of the tile, whose lower or bottom edge is of a reversed hooked section, so when a series of such tiles are arranged in courses, with their upper edges attached or secured by nailing or otherwise to a roofing or wall, or the like, the said hooked bottom edges of the tiles of each course will take into and interlock with the transverse channels or recesses in the tiles of the course below, so that each individual tile is secured, or held down at its bottom edge as well as at the top edge.

27,424 of 1903.—D. CREE and H. D. DICKSON: *Sectional Bookcases.*

A case for books or other articles, comprising a plurality of independent and interchangeable sections, adapted to be piled one upon another, and connected together, each of said sections consisting of end pieces, a bottom, top, a back affixed to the rear edges of the said end pieces, and a downwardly opening door pivotally affixed to the end pieces of each section at a point below the level of the respective section bottoms, said doors being fashioned with cyma recta edges adapted to rest upon and overlap the cyma recta upper edges of the similar doors belonging to the adjacent underlying section, said doors being adapted to open to a horizontal position, and to serve as shelves.

28,048 of 1903.—J. F. WINTERFLOOD and A. C. H. WINTERFLOOD: *Water Heaters.*

Water heaters and automatic valve attachments, consisting of two conical coils joined together at their larger and smaller ends with an inlet and outlet, a heating device, plate, and casings in combination with two valve chambers so fixed together that the spindle to which are connected the gas and water valves passes through the centre of the two chambers, the opening and closing of the water valve simultaneously opening and closing the gas valve, the water valve consisting of a ring or tube fixed to a rubber diaphragm and encircling a cup.

666 of 1904.—F. KEUSEN: *Adjustable Stove Pipe.*

An adjustable stove pipe, characterised by collars provided on the several parts, and by means of which the parts pushed into each other are guided and made tight, and which also admit of a slight movement.

910 of 1904.—A. T. GOODWIN: *A Greenhouse Building.*

In this improvement in a greenhouse building a cement sill is used, with iron attachments which securely cramps the sill and woodwork together, all the woodwork generally fitting on to the sill, to be cut short, leaving air spaces, brass plates being used to exclude outside air from entering the greenhouse.

5,177 of 1904.—G. MEYERHOLZ: *Device for Cutting Off and Pulling On Antiseptic Covers for the Seats of Water-closets.*

A device for automatically moving strips of antiseptic paper over the seats of water-closets, and cutting off the used ends of the same, comprising in combination two rollers suspended at the front end of the basin, strips of antiseptic paper wound on said rollers, two pairs of clamping rollers rotatably fixed on the lower surfaces of the seat near the edge of the central opening of the same, each pair of rollers serving for the guidance of the ends of the paper strips, curved levers, two at each side inside the basin, crossing each other, horizontal pivots, one for each pair of levers, and vertical pivots, one for each pair of levers, a rod connecting the ends of the inner and outer lever of each pair of curved levers, and a rod connecting the ends of the outer and inner lever of each pair of curved levers, an opening in the rear wall of the basin through which pass the coupled ends of the curved levers, links one for each pair of curved levers, linked to the middle of each connecting rod, a fixed ring through which said links are passed, a handle bar, to the bottom end of which the upper ends of the links are linked, spiral springs between the front ends of each pair of curved links, and spiral springs at the connecting rods of the lever ends.

6,530 of 1904.—W. KULOW: *Water-closets.*

A water-closet bowl or basin, having arranged within itself a separate lower end closed flushing chamber or pocket, having near its lower end an upward and rearward inclined jet-nozzle, a short distance above the latter, an additional correspondingly inclined jet-nozzle, jointly delivering their water jet into the upper part of the trap, said flushing chamber and trap and the outlet member of said trap, all being rectangular and relatively contracted throughout in cross-section.

6,762 of 1904.—W. K. KAYE: *Locks or Latches for Sliding Doors.*

Locks or latches for sliding doors, consisting of a handle in a sliding plate, such plate having a projection therein in combination with a lever and a movable hook bolt, with or without an extension thereon.

11,307 of 1903.—H. QUERTIER: *Machine for Excavating, Raising, Screening, and Filling Gravel Ballast, and the like.*

A machine, consisting in the combination a travelling truck, a circular turn-table thereupon, a bed-plate, friction rollers in the plate running upon the turn-table, a king post, winch drums that are operated through a motor-driven shaft and worm and worm wheel, lines upon the drums, said lines passing through the bed-plate and around the waist of the turn-table reversely to each other in such a way that when one of the drums is revolved, the bucket ladder and the superstructure of the machine will be swung out of line.

13,035 of 1903.—J. G. STIDDER: *A Flexible Damp-proof backing for Glass, Opal, and other Tiles.*

This consists of a mixture of pitch, sulphur, bitumen, oil, and sand, with small particles of glass or other material, prepared by heat, so as to form a flexible damp-proof grip backing applied to opal or other tiles fixed to walls, by which cracking by vibration is prevented.

13,273 of 1903.—H. C. FERRON: *Metallic Roofing-plates, and the like.*

The construction and use of a roof or covering composed of locking strips of metal secured to the ordinary supporting parts, and metal plates or "tiles," secured thereto by tongues.

13,566 of 1903.—D. LONGWORTH: *Sluice Gates or Shutters for Waterways.*

This consists in the combination with a sluice gate, shutter, or valve for waterways, of balance plates, one or more of which is or are placed on each side of the sluice vent or outlet, or on each side of the entrance passage thereto, whereby, when the sluice-gate shutter or valve is opened, the flow of water will be straight and unobstructed between the reservoir or head and its outlet sluice, vent, or discharge pipe.

13,689 of 1903.—T. GILMOUR: *Method of, and Means for, Draining and Ærating Agricultural Land, and Soil under Glass.*

A number of holes of any desired shape, and in any desired position, are formed in the drain tiles, but preferably in the upper part and joined edges of each tile. Tiles thus perforated are effective for draining purposes, and when these tiles are used, currents of air may be made to flow through them and through the surrounding earth by means of a pump, fan, blower, or exhauster, driven in any desired manner, but preferably by a wind-mill, or it might be a water-motor.

13,988 of 1903.—R. THEUL: *Beams or Girders.*

A bow-string girder of concrete and metal, in which the metal insertions in the curved concrete portion carrying the load are connected together by means of metal ties that take the thrust, said ties carrying a thin plate which extends as a chord across the concavity of the said curved portion, so as to constitute a flat

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

underside for the girder, with a sound deadening cavity between itself and the said curved portion.

18,916 of 1903.—G. P. WALLIS: *Brick-making Machinery.*

This relates to the manufacture of bricks of sand and lime, and consists of a compound mixer, constituted of two chambers at right-angles to one another, the chamber into which the sand and lime are first introduced having a revolving helical mixer or helical blades, carried by a spindle, which conveys the mixture to the second chamber inlets in first chamber, situated near the entrance for the sand and lime, for the admission of CO_2, or steam, or both, a dome or hollow space in said first chamber, in which said steam and CO_2 may admix before entering the mixture in said first chamber, two parallel horizontal spindles through centre of the second portion of mixer, rotating at differential speeds, knives, or blades, attached to said horizontal spindles, and a chute at the end of said second portion of mixer.

23,727 of 1903.—S. H. CLARKE: *An Arch Brick.*

An arch brick, consisting of two main parts partially superposed one upon the other, and united throughout the corresponding portion of the length of each, the said parts extending lengthwise beyond one another in opposite directions, the longitudinal jointing faces being disposed in places radially to the axis of the arch, whereof the brick forms an element, and the side faces of the brick being curved to radii, respectively corresponding to the radius of the said arch.

23,759 of 1903.—I. BRADLEY: *Heating Buildings.*

A heating system of the kind, in which heated water vapour is employed and passed through a system of pipes, or pipes and radiators, open to the atmosphere, consisting in the employment of a device for controlling the supply of vapour in accordance with the consumption.

6,372 of 1904.—THE FIREPROOF PLATE WALL COMPANY, LTD., and C. H. SIDEBOTHAM: *Building Plates or Slabs for Walls, or other Structures.*

This invention relates to plates made of plaster cement, or similar material for making or building partition walls, and for other structures, and is designed to provide plates which can be expediously erected, and with strong joints. It consists essentially in constructing a plate grooved on all four edges, with sinuous edges, and with feet or projections upon the bottom to hold the sinuous top and bottom joints apart for the insertion of plaster between them.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 3.—By DEBENHAM, TEWSON & Co.

Hoxton.—New North-rd., etc., f.g.r. 40*l.*, reversion in 4½ yrs. — £3,000
Nicholas-st., f.g. rents 61*l.*, reversion in 4½ yrs. — 12,105
St. John's-rd., etc., f.g. rents 32*l.*, reversion in 4½ yrs. — 2,775
Nicholas-st., four peppercorn f.g. rents, reversion in 4½ yrs. — 8,425
Nicholas-st., f.g. rents 17*l.*, reversion in 4½ yrs. — 5,700
Nile-st., etc., f.g. rents 36*l.* 19s. 10d., reversion in 4 yrs. — 3,500
Allerton-st., etc., f.g. rents 63*l.*, reversion in 4 yrs. — 7,275
Allerton-st., etc., five peppercorn f.g. rents, reversion in 4 yrs. — 10,150
Allerton-st., f.g. rents 33*l.*, reversion in 4 yrs. — 3,350

By CHAMPION & BUSBY.

Chelsea.—42, Elm Park-rd., u.t. 70 yrs., g.r. 15*l.*, y.r. 100*l.* — 7,000
60, Elm Park-rd., u.t. 70 yrs., g.r. 12*l.* 10s., y.r. 110*l.* — 995

By FRANK JOLLY & Co.

Maida Vale.—24, Blomfield-rd., u.t. 34½ yrs., g.r. 12*l.*, y.r. 65*l.* — 480

By PRICKETT & ELLIS.

Highgate.—59, High-st. (s.), c., y.r. 30*l.* .... — 530

By ALFRED RICHARDS.

Stamford Hill.—St. Ann's-rd., Tee-to-Tum Athletic Grounds, area 4½ acres, f., p. — 6,600
111, High-rd. (s.), with land in rear, u.t. 73½ yrs., g.r. 20*l.*, y.r. 40*l.* — 200
Tottenham.—127 and 129, Northumberland-pk., f., y.r. 80*l.* — 1,150
Northumberland-pk., f.g.r. 10*l.*, reversion in 66 yrs. — 240
97, Northumberland-pk., f., y.r. 40*l.* — 510
1, 2, and 3, Trulock-rd., u.t. 63 yrs., g.r. 10*l.*, e.r. 78*l.* — 745
603, High-rd. (s.), u.t. 63 yrs., g.r. 8*l.*, y.r. 45*l.* — 500
36 and 38, Lansdowne-rd., f. y.r. 87*l.* .... — 1,240

By J. W. FLORANCE (at Birmingham).

Sheldon, Warwick.—"Wells Farm," also "The Poplars," and "Cherry Tree Cottage," total area 110 acres, *f.* — 9,000

By WHITFIELD & SONS (at Oswestry).

West Felton, Salop.—"The Hollies" and 124 a. 1 r. 15 p., f. — 5,050
"Lady Hill Farm," area 99 a. 0 r. 9 p., f. .. — 3,500

May 4.—ABERCROMBIE & EDMUNDS.

Plaistow.—Plaistow-rd., "The Railway Tavern," u.t. 64 yrs., g.r. 80*l.*, y.r. 100*l.* .. — £2,000
Kentish Town.—40, Dartmouth Pk.-rd., u.t. 58 yrs., g.r. 8*l.*, y.r. 50*l.* — 380
Hampstead-road.—Harrington-st., l.g. rents 71*l.*, u.t. 20 yrs. g.r. 15*l.* — 580

By W. & F. EVES.

Fulham.—58, Bishop's-rd., u.t. 72½ yrs.. g.r. 7*l.* 10s., y.r. 46*l.* 16s. — 320
93, Bishop's-rd. (s.), u.t. 74 yrs., g.r. 9*l.*, w.r. 57*l.* 4s. — 450

By PERCY GOODSHIP & Co.

Wood Green.—Dagmar-rd., six plots of building land, f. — 650
New Southgate.—Bowes-rd., "The Oaks," u.t. 97 yrs., g.r. 7*l.*, e.r. 32*l.* — 310

By J. & R. KEMP & Co.

Deptford.—68 to 72 (even), Deptford-green, f., w.r. 75*l.* 8s. — 760

By E. J. LANE.

Bow.—44, Wellington-rd., f., w.r. 28*l.* 12s. .. — 320
Bromley-by-Bow. — 15, Edgar-rd., f., w.r. 32*l.* 10s. — 355
31 to 37 (odd), Three Mill-la., f., w.r. 110*l.* 4s. — 1,330
Tottenham.—31, Lealand-rd., u.t. 74 yrs., g.r. 6*l.*, w.r. 41*l.* 12s. — 265

By T. D. PEACEY.

Camden Town.—36 and 37, Park-st. (s.), u.t. 13 yrs., g.r. 8*l.*, y.r. 100*l.* — 450
Kentish Town.—59, Highgate-rd., u.t. 69 yrs., g.r. 12*l.*, w.r. 79*l.* 6s. — 425
81, Willes-rd. u.t. 48 yrs., g.r. 5*l.*, w.r. 58*l.* 10s. — 325

By C. P. WHITELEY.

Southampton.—Winchester-rd., "The Shirley Brewery," also Mineral Water Factory, area ¾ of an acre, f. — 2,475
Streatham.—50, Ellison-rd., u.t. 75 yrs., g.r. 2*l.*, y.r. 65*l.* — 850

May 5.—By H. J. BLISS & SONS.

Dalston.—Pownall-rd., l.g. rents 29*l.*, u.t. 41½ yrs., g.r. nil, with reversion — 500
Regent's-row, l.g. rents 18*l.*, u.t. 41½ yrs., g.r. nil, with reversion — 320
Norwich-rd., l.g. rents 11*l.* 5s., u.t. 41½ yrs., g.r. nil, with reversion — 190
Greenwood-rd., l.g. rents 8*l.*, u.t. 47 yrs., g.r. nil — 145
31, Navarino-rd., u.t. 49 yrs., g.r. 7*l.*, y.r. 48*l.* — 410
Clapton.—76 and 78, Rushmore-rd., f., y.r. 58*l.* — 910
Rushmore-rd., l.g.r. 5*l.*, reversion in 66 yrs. — 130
65, Rushmore-rd., u.t. 72½ yrs., g.r. 5*l.* 5s., y.r. 30*l.* — 340
42, Mayola-rd., u.t. 66½ yrs., g.r. 5*l.*, y.r. 32*l.* — 330
Stoke Newington.—109, Evering-rd., u.t. 71½ yrs., g.r. 9*l.*, y.r. 50*l.* — 400

By CHESTERTON & SONS.

South Kensington.—8, 9, 10, and 11, Walgrave-rd., u.t. 54 yrs., g.r. 10*l.* 12s., y.r. 132*l.* — 1,375
1 to 10, Logan-mews, u.t. 64 yrs., g.r. 10*l.*, y.r. 415*l.* — 4,100
Logan-mews, garden ground and storehouse, area 11,000 ft., u.t. 64 yrs., g.r. nil, y.r. 32*l.* — 1,500
Kensington.—5, Bedford-gdns., u.t. 19 yrs., g.r. 10*l.*, e.r. 75*l.* — 300

By FIELD & SONS.

Southwark.—60, 62, and 64, Sumner-st. (factory, s., etc.), area 2,600 ft., f., e.r. 215*l.* — 3,000
Walworth.—16, Beckway-st. (s.), f., y.r. 40*l.* . — 440

By G. HEAD & Co.

St. John's Wood.—5, Ordnance-rd., u.t. 30½ yrs., g.r. 5*l.*, y.r. 55*l.* — 350

By NEWBON, EDWARDS, & SHEPHARD.

Hackney.—Lauriston-rd., "The Empress of India," p.-h., etc., f.g.r. 100*l.*, reversion in 75 yrs. — 2,600
Dunloe-st., f.g.r., 8*l.* 8s., reversion in 22½ yrs. — 450
Clapton.—59, Median-rd., f., y.r. 34*l.* — 505
17 and 19, Elderfield-rd., f., y.r. 60*l.* — 925
60, Elderfield-rd., f., y.r. 32*l.* — 440
Hackney.—39, Gore-rd., u.t. 50 yrs., g.r. 2*l.*, y.r. 40*l.* — 465
2, Victoria-gr., u.t. 23½ yrs., g.r. 3*l.* 3s., w.r. 22*l.* 2s. — 135

By STIMSON & SONS.

Blackfriars.—79, Blackfriars-rd., f., y.r. 90*l.*.. — 1,240
Old Kent-rd.—71, Tower Bridge-rd. (s.), and 1 and 1A, Rothsay-st., f., y.r. 150*l.* — 2,575
Clapham.—11, The Polygon (s.), f., e.r. 50*l.* .. — 510
Dulwich.—1 to 4, Belmont-villas, u.t. 81 yrs., g.r. 25*l.* 4s., y.r. 136*l.* — 1,085
Stepney.—51, Stepney-green (with stabling and yard), u.t. 51 yrs., g.r. 15*l.*, e.r. 75*l.*.. — 740
Hendon.—Bell-la., two copyhold cottages, w.r. 35*l.* 2s. — 170
Walworth.—24 and 26, Lorrimore-st., u.t. 40 yrs., g.r. 10*l.*, y.r. 62*l.* — 575
Brockley.—47, 49, 51, 65, and 67, Adelaide-rd., u.t. 61½ yrs., g.r. 36*l.* 1s. 6d., y.r. 196*l.* — 1,775
South Lambeth.—189, Fentiman-rd., u.t. 66½ yrs., g.r. 12*l.* 5s., e.r. 50*l.* — 500
Clapham.—93, Marney-rd., u.t. 84½ yrs., g.r. 7*l.*, y.r. 36*l.* — 560
Finchley.—Vineyard-ter. (rear of), a plot of land, f. — 100
Stoke Newington.—15, Hawksley-rd., u.t. 69½ yrs., g.r. 6*l.*, e.r. 28*l.* — 250
12, Goldsmith-sq., u.t. 47½ yrs., g.r. 4*l.*, y.r. 28*l.* — 240

By JOSEPH STOWER.

Gray's Inn-rd.—5 to 16, Robert-st., f., y.r. 410*l.* — 8,150
19 to 29, Robert-st., f., y.r. 340*l.* — 6,630
14, Little James-st., f., y.r. 32*l.* — 710
Little James-st., "The White Lion" p.h., f., y.r. 100*l.* — 3,550
Battersea.—30, 31, and 34, Gladstone-ter., u.t. 58½ yrs., g.r. 13*l.* 10s., w.r. 107*l.* — 655

By WORSFOLD & HAYWARD (at Dover).

Dover.—1, 2, and 3, Caroline-pl., f., w.r. 43*l.* 6s. 8d. — £465
6 and 7, Union-row, f., w.r. 29*l.* 9s. 4d. — 290
7 and 8, Bowling Green-hill, f., w.r. 22*l.* 2s. — 205
13, 14, and 18, Albion-pl., f., w.r. 35*l.* 10s. 8d. — 190
47, Buckland-av., f., p. — 345
59, Clarendon-st., f., w.r. 18*l.* 4s. — 240
81, High-st., f., p. — 380
16, De Burgh-st., f., y.r. 16*l.* — 250

By CRONKS' (at Sevenoaks).

Sundridge, Kent. — "Scollops Farm," 88 a. 3 r. 27 p., f., p. — 3,050
Sevenoaks, Kent.—Clarendon-rd., freehold building land, with stone quarry, 3 a. 2 r. 0 p. — 700
65, London-rd. (business premises and warehouse), also stabling and cottage adjoining, f., p. (with goodwill) — 4,570

By BOYTON, SONS, & BUCKMASTER (at Fulham).

Fulham.—44, Britannia-rd., u.t. 52 yrs., g.r. 5*l.*, p. — 400
Battersea.—1, Ashness-rd. (s.), u.t. 77½ yrs., g.r. 6*l.*, y.r. 42*l.* — 515

May 6.—WM. CLARKSON.

Walthamstow.—10, Coppermill-la., f., w.r. 33*l.* 16s. — 265
Forest-rd., four plots of freehold land — 370

By DRIVERS'.

Holloway.—1A, 2A, 2, and 4, Victoria-rd., f., y.r. 148*l.* — 2,000

By ELLIS & SON.

City of London.—109, Fenchurch-st. (shops and offices), area 2,800 ft., u.t. 65 yrs., g.r. 900*l.*, e.r. 1,910*l.* — 4,800
Chadwell Heath, Essex. — Whalebone-la., "Paulatine Lodge" and 18¼ acres, f., p. . — 4,600

By LINNETT & LANE.

Harlesden.—57 and 59, Craven Park-rd., u.t. 68 yrs., g.r. 9*l.* 4s., y.r. 85*l.* — 850
25, Fortune Gate-rd., u.t. 85 yrs., g.r. 6*l.*, e.r. 34*l.* — 290

By NOTT, CARTWRIGHT, & ETCHES.

Pimlico.—187, Vauxhall Bridge-rd., u.t. 20 yrs., g.r. 5*l.* 10*l.*, y.r. 46*l.* — 300
Balham.—6, 8, 10, 12, 20, 22, and 24, Harberson-rd., u.t. 81 yrs., g.r. 42*l.* 12s., w.r. 249*l.* 12s. — 1,920
150 and 152, Ramsden-rd., f., y.r. 80*l.* .... — 1,100
15, 16, and 17, Holly-gr., f., w.r. 75*l.* 8s. .. — 690

By G. A. WILKINSON & SON.

Balham.—87, Fernlea-rd., u.t. 69½ yrs., g.r. 6*l.* 6s., y.r. 32*l.* — 250

May 5.—By J. HARRIS & SON (at Stockbridge).

Stockbridge, Hants.—"Upper Sandy Down Farm," 201 a. 1 r. 16 p., f. — 1,650
London-rd., freehold land with stabling and granary, area 0 a. 2 r. 23 p. — 155
White-st., four freehold cottages, w.r. 41*l.* 12s. — 750
High-st., "Hero Cottage," f., y.r. 14*l.* .... — 225

By SMALLPEICE, ALLEN, & Co. (at Croydon).

Croydon.—17, 18, and 19, Dingwall-rd., f., y.r. 113*l.* — 1,375

By R. C. S. EVENETT (at Haslemere).

Haslemere, Surrey.—"Church Hill Cottage," and 0 a. 1 r. 17 p., f., y.r. 40*l.* — 750
"Grove Cottage" and "Bankside Cottage," and 0 a. 1 r. 18 p., f., y.r. 13*l.* 13s. — 1,000
Shepherd's Hill, three cottages, part f. and part long leasehold, g.r. nil, y.r. 32*l.* 18s. — 450
Shepherd's Hill, freehold building site .... — 140
Clay Hill, freehold brick yard, cottage, and 1 a. 3 r. 2 p., y.r. 11*l.* — 1,100
Clay Hill, two freehold cottages — 510
Clay Hill, enclosure of land, 0 a. 2 r. 30 p., f. — 275
Bunch-la., a freehold meadow, 3¼ acres .... — 850

May 9.—By FRASER & HEIGH.

Kentish Town.—39, Lady Margaret-rd., u.t. 61 yrs., g.r. 4*l.*, p. — 550
Regent's Park.—15, Chalcot-cres., f., y.r. 48*l.* — 640
Kentish Town.—1, 2, and 3, Wesleyan-pl., f., y.r. 92*l.* — 1,295
29, Gospel Oak-gr., f., y.r. 28*l.* — 365
44 and 48, Woodsome-rd., u.t. 58 yrs., g.r. 13*l.* 10s., y.r. 84*l.* — 915
Regent's Park.—6, Oppidans-rd., u.t. 60 yrs., g.r. 12*l.*, y.r. 50*l.* — 700

By H. HOLMES & Co.

Marylebone.—31, 34, and 37, Fitzroy-st., f., y.r. 205*l.* — 4,300
Tottenham Court-road.—12, London-st. (s.), f., y.r., 65*l.* — 1,250
94 and 96, Whitfield-st., f., y.r. 100*l.* — 2,200

By NICHOLAS, DENYER, & Co.

Northwood, Middlesex.—"Green End" and 1 a. 0 r. 13 p., f., p. — 2,000
Turner's Hill, Sussex.—"Mount Pleasant" and 14 acres, f., p. — 1,900

By MORRIS, MARSHALL, & POOLE (at Welshpool).

Llanfair Caereinion, etc., Montgomeryshire.—"The Heniarth Estate" and Water Corn Mill, 119 a. 1 r. 36 p., f. — 3,365

May 10.—DEBENHAM, TEWSON, & Co.

West Worthing, Sussex. — Marine Parade, "The Hotel Metropole" (unfinished), area 2½ acres, f., p. — 10,300
Hendon.—The Hyde, "The Rookery" and 12 a. 0 r. 30 p., f., y.r. 125*l.* — 5,658
Totteridge-la., four enclosures of land, 39 a. 0 r. 25 p., f., p. — 3,325
Mill Hill.—Main-rd., four cottages, farmhouse, and buildings, area 2 a. 0 r. 36 p., f., y.r. 66*l.* 8s. — 1,725

By A. ALDRIDGE & Co.

Barbican.—Lensden-pl., f.g.r. 130*l.*, reversion in 71 and 66 yrs. — 3,120
Wood Green.—Palace Gates-rd., f.g.r. 39*l.*, reversion in 90½ yrs. — 897
Wembley, Middlesex.—Copland-rd., f.g.r. 36*l.*, reversion in 92 yrs. — 828

By BREADMORE & WEBB.
Weybridge, Surrey.—Prince's-rd., "Lancaster Cottage," f., y.r. 6*l.* £900

By DAVID BURNETT & Co.
Old Kent-road.—Hatcham-rd., f.g.r. 17*l.* 8s., reversion in 42½ yrs. 450
Penarth-st., f.g.r. 16*l.*, reversion in 46 yrs. . 365
Sydenham.—Bradford-rd., f.g.r. 51*l.*, reversion in 60 yrs. 1,260
Folkestone, Kent.—Canterbury-rd., etc., f.g.r. 15*l.*, reversion in 72 yrs. 430
Marylebone.—6, Grove-mews, u.t. 68½ yrs., g.r. 7*l.*, y.r. 52*l.* 400
East Barnet.—Fergusson-rd., f.g.r. 37*l.* 10s., reversion in 94 yrs. 810
East Barnet-ter., f.g.r. 30*l.*, reversion in 95½ yrs. 685

By NIGHTINGALE, PHILLIPS, & PAGE.
Putney.—Upper Richmond-rd., f.g. rents 24*l.*, reversion in 64 yrs. 635

By G. F. NORFOLK & Co.
Blackheath.—22, Banchory-rd., u.t. 81 yrs., g.r. 5*l.* 10s., w.r. 35*l.* 2s. 285

By ROGERS, CHAPMAN, & THOMAS.
Pimlico.—41 and 45, Denbigh-st., u.t. 26 yrs., g.r. 16*l.*, y.r. 122*l.* 1,010
87, Lupus-st., u.t. 24 yrs., g.r. 10*l.*, y.r. 80*l.* 700

By FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).
Shepherd's Bush.—218, Uxbridge-rd. (with off-licence), u.t. 7½ yrs., y.r. 60*l.* 400
Stoke Newington.—12, Stoke Newington-rd. (with off-licence), u.t. 22 yrs., y.r. 100*l.*... 950
Dalston.—5, Junction-pl. (with off-licence), u.t. 20 yrs., y.r. 120*l.* 250
Holloway.—128, Hornsey-rd. (with off-licence), u.t. 15 yrs., y.r., etc., 105*l.* 360

By J. H. NORTH & Co. (at Dublin).
Foxford, co. Mayo.—"The Massbrook Estate," 356 acres (with shooting rights over 3,167 acres) 7,500

May 11.—By H. J. BROMLEY.
Norwood.—431 and 433, Norwood-rd. (s.), u.t. 53 yrs., g.r. 25*l.*, y.r. 210*l.* 2,600

By H. DONALDSON & SON.
Blackfriars.—Gray-st., the "John o' Groats" p.h., etc., f.g. rents 52*l.* 10s., reversion in 31 yrs. 1,800
Mile-end.—2 to 16 (even), Louisa-gdns., u.t. 64 yrs., g.r. 49*l.* 13s., w.r. 313*l.* 6s. 2,490

By EASTMAN BROS.
Sydenham.—9, Venner-rd., f., e.r. 40*l.* 360

By PROTHEROE & MORRIS.
Rayleigh, Essex.—Eastwood-rd., "The Bungalow," f., y.r. 25*l.* 400

By A. H. TURNER & Co.
Weybridge, Surrey.—Windsor Walk, "Greta Bank," f., p. 1,500

By DOUGLAS YOUNG & Co.
Chelsea.—59 to 65 (odd), Park-walk; 25 to 37 (odd), Little Camera-st., 1 to 15, Camera-cottages (with manufacturing premises), u.t. 10½ yrs., g.r. 23*l.* 19s., y.r. 661*l.* 18s. . 1,700
1 to 19, Camera-sq. and land adjoining, u.t. 10½ yrs., g.r. 35*l.* 10s., y.r. 572*l.* 2s. 2,400
Streatham.—25, Stanthorpe-rd., u.t. 77 yrs., g.r. 15*l.* 6s., y.r. 55*l.* 400
Hampton Wick, Middx.—Cedars-rd., "Esk House," u.t. 93 yrs., g.r. 10*l.*, e.r. 50*l.* 350
Catford.—151, Braidwood-rd., u.t. 991 yrs., g.r. 3*l.* 16s., y.r. 26*l.* 190

By ALFRED RICHARDS.
Tottenham.—116 to 134 (even), West Green-rd., f., y.r. 339*l.* 7,100
136, West Green-rd., f., y.r. 54*l.* 840
138 to 152 (even), West Green-rd., f., y.r. 332*l.* 4,410
1 to 31 (odd), Bedford-rd., f., y.r. 586*l.* 7,995
2 to 30 (even), Bedford-rd., f., y.r. 538*l.* 7,300
Lawrence-rd., two pieces of freehold building land 1,600

By W. BROWN & Co. (at Chesham).
Chartridge, Bucks.—"Lime Tree Farm," 100 a. 1 r. 5 p., f. 3,300

By CHESSHIRE, GIBSON, & Co. (at Dolgelly).
Llanelltyd, Merioneth.—Cesailgwm Bach Farm, 265 a. 3 r. 10 p., f. 1,660
Llanaber, Merioneth.—Cwm-Mynach-Canol Farm, 233 a. 1 r. 35 p., f. 551
Llanddwywe-Uwch-y-Graig, Merioneth.—Derlwyn Glanllwyd Farm, 252 a. 1 r. 38 p., f. 280

By EDWIN EVANS (on the Estate).
Norbury.—Melrose-ave., etc. (Norbury Park Estate), 112 plots of freehold building land (in lots) 11,340

May 12.—By CRONKS'.
Sevenoaks, Kent.—7 and 8, Camden-villas, f., y.r. 82*l.* 10s. 890
2, Granville-rd., f., y.r. 50*l.* 500

By DAVIS & Co.
Peckham.—4 to 14, 26, 32 to 46 (even), Marmont-rd., u.t. 52½ yrs., g.r. 80*l.*, w.r. 665*l.* 12s. 3,640

By NEWBON, EDWARDS, & SHEPHARD.
Holloway.—481, Holloway-rd., f., y.r. 85*l.* 1,160
20, Manor-gdns., u.t. 62 yrs., g.r. 8*l.*, y.r. 48*l.* 425
52 and 54, Rupert-rd., u.t. 59½ yrs., g.r. 14*l.* 14s., w.r. 109*l.* 4s. 320
43 and 45, Cromwell-rd., u.t. 59 yrs., g.r. 14*l.* 14s., w.r. 111*l.* 16s. 330
67 and 69, Hampden-rd., u.t. 62 yrs., g.r. 12*l.*, w.r. 104*l.* 325
57 and 59, Langdon-rd., u.t. 72½ yrs., g.r. 10*l.*, w.r. 83*l.* 4s. 595
56 and 58, Rupert-rd., u.t. 53 yrs., g.r. 15*l.*, w.r. 80*l.* 12s. 475
67 and 69, Yerbury-rd., u.t. 63 yrs., g.r. 12*l.*, y.r. 72*l.* 630
82 and 84, Campbell-rd., u.t. 63½ yrs., g.r. 10*l.*, w.r. 65*l.* 380
Hornsey Rise.—15, Mulkern-rd., u.t. 74½ yrs., g.r. 5*l.*, w.r. 29*l.* 18s. 190
Kentish Town.—58, 60, and 62, Peckwater-st., u.t. 45 yrs., g.r. 15*l.*, w.r. 117*l.* 645
Canonbury.—33, Halton-rd., u.t. 14½ yrs., g.r. 4*l.* 4s., q.r. 34*l.* 120

By FAREBROTHER, ELLIS, & Co.
West Kensington.—10, 12, 14, 19, 21, and 23, Auriol-rd., u.t. 65 yrs., g.r. 24*l.*, y.r. 335*l.* £3,030
Fleet-street.—3, Crane-ct., area 750 ft., building lease for 80 yrs., let at per annum 100

By C. C. & T. MOORE.
Commercial-rd. East.—No. 152, also 2 and 4, Morgan-st. (s.), f., p. 1,700
Leytonstone.—53, 55, and 57, Queen's-rd., f., y.r. 100*l.* 1,405
Bow.—146 and 148, Tredegar-rd., u.t. 44 yrs., g.r. 15*l.*, w.r. 67*l.* 12s. 500
Canonbury.—68, Grosvenor-rd., u.t. 45 yrs., g.r. 8*l.* 8s., e.r. 52*l.* 400

By DEASON & PENNY and EDWIN EVANS.
Kensal Green.—1 to 11, Rigely-rd., u.t. 75 yrs., g.r. 28*l.* 10s., w.r. 218*l.* 8s. 1,350
Harlesden.—67, Drayton-rd., u.t. 97 yrs., g.r. 7*l.*, w.r. 54*l.* 12s. 330

By EDWIN EVANS.
Ealing.—Lavington-rd., etc., f.g.r. 101*l.* 4s., reversion in 97 yrs. 2,570
Fulham.—Gastien-rd., f.g.r. 30*l.*, reversion in 88½ yrs. 700
Streatham.—66, Lewin-rd., f., e.r. 60*l.* 905
Battersea.—58, Battersea-rise (s., off-license), u.t. 76 yrs., g.r. 12*l.*, y.r. 60*l.* 730
Wandsworth.—93, St. Ann's-hill (s.), u.t. 96½ yrs., g.r. 6*l.* 10s., y.r. 36*l.* 500
21 and 23, Barmouth-rd. (s.), u.t. 98½ yrs., g.r. 14*l.* 14s., y.r. 80*l.* 845

By STIMSON & SONS.
Bermondsey.—20 to 36 (even), Cranham-rd., u.t. 51 yrs., g.r. 24*l.* 15s., w.r. 315*l.* 18s. . 2,350
Dalston.—20, St. Philip's-rd., u.t. 46½ yrs., g.r. 6*l.*, e.r. 45*l.* 380
Old Kent-road.—8 and 9, Avondale-sq., u.t. 50½ yrs., g.r. 12*l.* 12s., y.r. 68*l.* 700
102, Ormside-st. (s.), u.t. 64½ yrs., g.r. 4*l.*, w.r. 26*l.* 160
New Kent-rd.—67, 69, and 79, Falmouth-rd., u.t. 11½ yrs., g.r. 66*l.*, w.r. 130*l.* 125
Walworth.—27 and 29, Phelp-st., and 1, 3, 5, and 7, Doctor-st., u.t. 4 yrs., g.r. 19*l.*, w.r. 183*l.* 6s. 125
Brixton.—31 and 39, Thornbury-rd., u.t. 77½ yrs., g.r. 12*l.* 10s., y.r. 68*l.* 650
5, Gateley-rd., u.t. 72 yrs., g.r. 9*l.*, y.r. 45*l.* 460
Norwood.—62, Gipsy-hill, u.t. 59 yrs., g.r. 14*l.* 5s., e.r. 60*l.* 300
Wandsworth.—5, Heathfield, f., e.r. 45*l.* 810

May 13.—By BUCKLAND & SONS.
Piccadilly.—38, Half Moon-st., beneficial lease for 15 yrs., y.r. 180*l.* 545

By NORRIS, SON, & HADLEY.
St. John's Wood.—9, Clifton-hill, u.t. 33 yrs., g.r. 12*l.*, e.r. 60*l.* 500

By PRICE, ARROW, & TAYLOR.
Brixton.—13 to 18, Seneca-rd., u.t. 76 yrs., g.r. 30*l.*, w.r. 211*l.* 18s. 1,320

By W. B. HALLETT.
Highbury.—117, Highbury New-pk., u.t. 45 yrs., g.r. 8*l.* 10s., e.r. 80*l.* 495
Anerley.—2, Station-rd. (s.), u.t. 70 yrs., g.r. 17*l.*, e.r. 80*l.* 295
Lambeth.—22, Lambeth-walk, u.t. 81 yrs., g.r. 20*l.*, w.r. 62*l.* 10s. 250

By REYNOLDS & EASON.
Lewisham.—Loampit-hill, "Beaufort Lodge," u.t. 51¾ yrs., g.r. 1*l.* 10s., y.r. 55*l.* 555
Dalston.—4 to 14 (even), Shrubland-rd., u.t. 15 yrs., g.r. 24*l.*, y.r. 184*l.* 850
83, Forest-rd., u.t. 8½ yrs., g.r. 4*l.*, y.r. 30*l.*.. 120
Haggerston.—Fellows-st., l.g.r. 35*l.*, u.t. 9½ yrs., g.r. nil 230
Commercial-road East.—Nos. 595 and 597, also 1A and 2A, Belgrave-st., u.t. 4½ yrs., g.r. 20*l.*, y.r. 145*l.* 310
Commercial-road East.—No. 593, u.t. 4½ yrs., g.r. 20*l.*, y.r. 70*l.* 105
Stepney.—85, 89, 91, and 93, Dempsey-st., u.t. 9½ yrs., g.r. 12*l.*, y.r. 126*l.* 505
95, Exmouth-st., u.t. 9½ yrs., g.r. 3*l.*, y.r. 31*l.* 110
9 to 13, East Arbour-st., u.t. 7½ yrs., g.r. 12*l.* 10s., y.r. 138*l.* 415
Limehouse.—1 to 27 (odd), Aston-st., and 13, Matlock-st., u.t. 22 yrs., g.r. 22*l.* 12s., y.r. 369*l.* 2,435
Aston-st., l.g.r. 42*l.* 5s., u.t. 22 yrs., g.r. 10*l.* 365
West Ham.—2 to 12 (even), Church-st., and 145 to 151 (odd), West Ham-la., u.t. 21 yrs., g.r. 80*l.*, y.r. 325*l.* 3s. 1,600

By H. E. TRAFFORD & CARTER.
Spitalfields.—25, 27, 28, 29, and 31, Tenter-st., f., w.r. 228*l.* 16s. 3,600
Forest Gate.—55 to 61 (odd), Latimer-rd., f., y.r. 110*l.* 1,400

By THE AUCTION Co.
Holloway.—15, Langdon-rd., f., y.r. 40*l.* 575

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; h.h. for beer-house; p.h. for public-house; o. for offices; s. for shops; ct. for court.

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MEETINGS.

FRIDAY, MAY 20.
Royal Institution.—Professor E. Rutherford, M.A., on "The Radiation and Emanation of Radium. 9 p.m.
Junior Institution of Engineers (Westminster Palace Hotel).—Paper entitled "Practical Notes on the Running of Motor Cars and Cycles," by Lieut. W. G. Windham, R.N. 8 p.m.
Incorporated Association of Municipal and County Engineers.—Midland District Meeting, Buxton.

SATURDAY, MAY 21.
Edinburgh Architectural Association.—Visit to Fordell Castle and Old Garden.
Incorporated Association of Municipal and County Engineers.—Midland District Meeting. Concluded.

TUESDAY, MAY 24.
Royal Institution.—Mr. H. F. Newall, M.A., F.R.S., on "The Solar Corona," I. 5 p.m.

THURSDAY, MAY 26.
Institution of Electrical Engineers (at The Society of Arts).—Mr. Alexander Siemens, Past President, on "High Speed Electric Railway Experiments on the Marienfeld-Zossen Line." 8 p.m.

FRIDAY, MAY 27.
Royal Institution.—His Serene Highness Albert Prince of Monaco on "The Progress of Oceanography." 9 p.m.

SATURDAY, MAY 28.
Royal Institution.—Sir W. Martin Conway, M.A., on "Spitsbergen in the XVIIth Century," I. 3 p.m.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and Quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.			
Hard Stocks	1 16 0	per 1000	alongside, in river.	
Rough Stocks and Grizzles	1 13 0	,,	,,	,,
Facing Stocks ...	2 12 0	,,	,,	,,
Shippers	2 10 0	,,	,,	,,
Flettons	1 10 0	,,	at railway depôt.	
Red Wire Cuts ...	1 13 0	,,	,,	,,
Best Fareham Red	3 12 0	,,	,,	,,
Best Red Pressed Ruabon Facing	5 0 0	,,	,,	,,
Best Blue Pressed Staffordshire ...	4 4 0	,,	,,	,,
Do. Bullnose	4 10 0	,,	,,	,,
Best Stourbridge Fire Bricks.....	4 8 0	,,	,,	,,
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	13 0 0	,,	,,	,,
Headers	12 0 0	,,	,,	,,
Quoins, Bullnose, and Flats.....	17 0 0	,,	,,	,,
Double Stretchers	19 0 0	,,	,,	,,
Double Headers...	16 0 0	,,	,,	,,
One Side and two Ends	19 0 0	,,	,,	,,
Two Sides and one End	20 0 0	,,	,,	,,
Splays, Chamferred, Squints.	20 0 0	,,	,,	,,
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	,,	,,	,,
Quoins, Bullnose, and Flats.....	14 0 0	,,	,,	,,
Double Stretchers	15 0 0	,,	,,	,,
Double Headers...	14 0 0	,,	,,	,,
One Side and two Ends	15 0 0	,,	,,	,,
Two Sides and one End	15 0 0	,,	,,	,,
Splays, Chamferred, Squints	14 0 0	,,	,,	
Second Quality, White and Dipped Salt Glazed	2 0 0	,,	less than best.	

	s. d.		
Thames and Pit Sand.....	7 3	per yard,	delivered.
Thames Ballast.....	6 0	,,	,,
Best Portland Cement	30 0	per ton,	,,
Best Ground Blue Lias Lime	21 0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.		
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.	
Do. do. delivered on road waggons, Nine Elms Depôt	1 8¼	,,	,,
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 1	,,	,,
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 2½	,,	,,

	s. d.		
Ancester in blocks	1 11	per ft. cube,	deld. rly. depôt.
Beer ,, ...	1 6	,,	,,
Greenshill ,, ...	1 10	,,	,,
Darley Dale in blocks...	2 4	,,	,,
Red Corsehill ,,	2 5	,,	,,
CloseburnRedFreestone	2 0	,,	,,
Red Mansfield ,,	2 4	,,	,,

YORK STONE—*Robin Hood Quality*

	s. d.		
Scappled random blocks	2 10	per ft. cube.	,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per foot super.	,,
6 in. rubbed two sides ditto, ditto	2 6	,,	,,

STONE.—(*continued*).

	s. d.	
3 in. sawn two sides slabs (random sizes)	0 11½	per ft. sup. deld. rly. depot.
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	„ „
4½ in. to 2 in. ditto, ditto	0 6	„ „
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, „
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. „
6 in. rubbed two sides Ditto	3 0	„ „
3 in. sawn two sides (slabs random sizes)	1 2	„ „
2 in. self-faced random flags	0 5	„ „
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube.
„ „ „ 6 in. sawn both sides landings	2 7	deld. rly. depôt per ft. super. deld. rly. depôt
„ „ „ 3 in. do.	1 2½	„ „

SLATES.

in. in.	£ s. d.	
20 × 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 × 12 „ „	13 17 6	„ „
20 × 10 first quality „	13 0 0	„ „
20 × 12 „ „ „	13 15 0	„ „
16 × 8 „ „ „	7 5 0	„ „
20 × 10 best blue Portmadoc	12 12 6	„ „
16 × 8 best blue Portmadoc	6 12 6	„ „
20 × 10 best Eureka unfading green	15 17 6	„ „
20 × 12 „ „	18 7 6	„ „
18 × 10 „ „	13 5 0	„ „
16 × 8 „ „	10 5 0	„ „
20 × 10 permanent green	11 12 6	„ „
18 × 10 „ „	9 12 6	„ „
16 × 8 „ „	6 12 6	„ „

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. depôt.
Hip and Valley tiles	3 7	per doz. „ „
Best Brosely tiles	50 0	per 1000 „ „
Do. Ornamental tiles	52 6	„ „ „
Hip and Valley tiles	4 0	per doz. „ „
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 „ „
Do. Ornamental do	60 0	„ „ „
Hip tiles	4 0	per doz. „ „
Valley tiles	3 0	„ „ „
Best Red or Mottled Stafford shire do. (Peakes)	51 9	per 1000 „ „
Do. Ornamental do	54 6	„ „ „
Hip tiles	4 1	per doz. „ „
Valley tiles	3 8	„ „ „
Best "Rosemary" brand plain tiles	48 0	per 1000 „ „
Best Ornamental tiles	50 0	„ „ „
Hip tiles	4 0	per doz. „ „
Valley tiles	3 8	„ „ „
Best "Hartshill" brand plain tiles, sand faced.	50 0	per 1000 „ „
Do. pressed	47 6	„ „ „
Do. Ornamental do	50 0	„ „ „
Hip tiles	4 0	per doz. „ „
Valley tiles	3 6	„ „ „

WOOD.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	15 10 0	16 10 0
Deals: best 3 by 4	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less thn best
Battens: seconds	0 10 0	„ „ „
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	„
	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	£ s. d. 4 10 0	£ s. d. 5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0
JOINERS' WOOD.		
White Sea: first yellow deals,	At per standard.	
3 in. by 11 in	23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
„ „ 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Petersburg: second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
„ „ 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
„ „ 3 in. by 9 in.	12 10 0	13 10 0
„ „ battens	9 10 0	10 10 0

WOOD.—(*continued*).

	At per standard. £ s. d.	£ s. d.
Pitch-pine: deals	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	35 0 0	upwards.
Oddments	24 0 0	26 0 0
Seconds, regular sizes	26 10 0	28 10 0
Yellow Pine oddments	22 0 0	24 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 2 6	0 3 6
Small „ „	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube.	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
¾ in. do. do.	0 0 6½	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks— per ft. cube	0 4 0	—
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
¾ in. by 7 in. do. do. do.	0 14 0	0 18 0
1 in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	... 7 5 0
Compound Girders, ordinary sections	8 2 6	... 9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6	... 8 17 6
Flitch Plates	8 5 0	... 8 15 0
Cast Iron Columns and Stanchions including ordinary patterns	7 2 6	... 8 5 6

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 5 0	... 7 15 0
Staffordshire Crown Bars, good merchant quality	7 15 0	... 8 5 0
Staffordshire "Marked Bars"	10 0 0	... —
Mild Steel Bars	8 15 0	... 9 5 0
Hoop Iron, basis price	9 5 0	... 9 10 0
„ „ Galvanized	17 10 0	... —
(*And upwards, according to size and gauge.)		
Sheet Iron (Black)—		
Ordinary sizes to 20 g.	9 15 0	... —
„ „ 24 g.	10 15 0	... —
„ „ 26 g.	12 5 0	... —
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 15 0	... —
Ordinary sizes to 22 g. and 24 g.	13 5 0	... —
„ „ 26 g.	14 5 0	... —
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	16 0 0	... —
„ „ 22 g. and 24 g.	16 10 0	... —
„ „ 26 g.	18 0 0	... —
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0	... —
„ „ 22 g. and 24 g.	13 0 0	... —
„ „ 26 g.	13 15 0	... —
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 15 0	... —
Best Soft Steel Sheets, 22 g. & 24 g.	12 15 0	... —
„ „ „ 26 g.	14 0 0	... —
Cut nails, 3 in. to 6 in.	9 0 0	... 9 10 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up	14 12 6	... —
Pipe in coils	15 2 6	... —
Soil pipe	17 12 6	... —
Compo pipe	17 12 6	... —
ZINC—Sheet—		
Vieille Montagne ,,ton	27 5 0	... —
Silesian	27 0 0	... —
COPPER—		
Strong Sheet ,,per lb.	0 0 10½	... —
Thin „ „	0 0 11½	... —
Copper nails „	0 0 11	... —
BRASS—		
Strong Sheet „	0 0 10	... —
Thin „ „	0 0 11	... —
TIN—English Ingots „	0 1 4	... —
SOLDER—Plumbers' „	0 0 6½	... —
Tinmen's „	0 0 8	... —
Blowpipe „	0 0 9	... —

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2d. per ft. delivered.
„ fourths	1¼d. „ „
21 oz. thirds	3d. „ „
„ fourths	2¼d. „ „
26 oz. thirds	3½d. „ „
„ fourths	3d. „ „
32 oz. thirds	4¼d. „ „
„ fourths	4d. „ „
Fluted Sheet, 15 oz.	2¾d. „ „
„ 21 oz.	3¼d. „ „
½ Hartley's Rolled Plate	1½d. „ „
⅓ „ „ „	1¾d. „ „
¼ „ „ „	2¼d. „ „

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes or barrels	per gallon	0 1 5
„ „ „ in drums	„	0 1 8
Boiled „ „ in pipes or barrels	„	0 1 8
„ „ „ in drums	„	0 1 11
Turpentine, in barrels	„	0 3 7
„ in drums	„	0 3 9
Genuine Ground English White Lead	per ton	19 0 0
Red Lead, Dry	„	19 0 0
Best Linseed Oil Putty	per cwt.	0 6 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

R. G. A.—W. B. & L.—N. H. D.—W. M. S.—F. B. (Below our limit).—A. S. (Amounts should have been stated).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

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All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

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All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* **Denotes** *accepted*. † **Denotes** *provisionally accepted*.

ABERDEEN. — For laying permanent way and relative causewaying work for the dock railways, for the Aberdeen Harbour Commissioners. Mr. R. Gordon Nicol, engineer, Aberdeen:—

P. Tawse, Aberdeen £12,231 10 10

BARNSLEY.—For street works (Hope-street, Day-street, and Nursery-street), for the Town Council. Mr. J. H. Taylor, Borough Surveyor, Manor House, Barnsley:—

Hope-street.

G. Haigh, Harbro' Hills, Barnsley* .. £1,090 0 0

Nursery-street.

G. F. Brown, Park-road, Barnsley* .. 341 0 0

Day-street.

G. F. Brown, Park-road, Barnsley* .. 268 18 7

BISLEY, Surrey.—For new bath-room, lavatory, dressing-room, etc., at the Shaftesbury School, Bisley, for the National Refuges for Homeless and Destitute Children. Mr. R. Gardner Hammond, architect, 16, Essex-street, Strand, W.C.:—

G. Wade £390 10 0

J. Norris & Sons* 371 10 0

BLACKBURN.—For alterations to existing buildings to form bakery, linen-rooms, cloggers' workshop, etc., at the workhouse, for the Guardians. Mr. F. C. Ruddle, architect, 4, King-street, Blackburn:—

W. J. Woof Cronshaw & Sons, Pump-street, Blackburn £1,150

BRENTFORD.—For 500 cubic yds. of blue Guernsey granite, for the Urban District Council. Mr. Nowell Parr, Surveyor, Clifden House, Boston-road, Brentford:—

	per cubic yard. s. d.		per cubic yard. s. d.
E. & H. Beevers ..	15 9	Fry Bros.	14 0
J. Hall	15 5	G. Le Maitre, Grosvenor-road, S.W.*	13 10
L. Sommerfeld	14 5		
J. Mowlem & Co. ..	14 4		

BRAMFORD.—For brick abutments for new bridge over the Navigation, Bramford, near Ipswich, for the East Suffolk County Council. Mr. H. Miller, County Surveyor, Ipswich :—

Pedrette	£1,265	Coe	£988
Grimwood	1,075	Double	954
Muirhead, Grieg, & Matthews	1,074	Wilkinson Bros., Finsbury Park*	890
Parkington	1,050		

BRIDGWATER.—For alterations to Market House buildings, for the Town Council. Mr. Francis Parr, A.M.I.C.E., Borough Surveyor. Quantities by Surveyor :—

T. Stockham	£295	C. Bryer, jun., Bridgwater*	£220
Gleed Bros.	289		

BRIDLINGTON.—For piling and other work in connexion with the new Southern Outfall, for the Sanitary Committee. Mr. E. R. Matthews, Borough Surveyor :—

B. Robinson	£1,400 0 0†
T. C. Starkey	1,337 16 6
Harman & Langton	1,050 0 0
G. Bell, 29, Corporation-street, Manchester*	720 0 0†

CHESHUNT.—For about 7,500 ft. of Norwegian granite channel, for the Urban District Council. Mr. R. H. Jeffes, Engineer and Surveyor, Manor House, Cheshunt :—

G. Mann	£898 0 0	M. S. Kelleringham	£689 13 9
J. Jackson	860 10 0	E. J. Betts	666 5 0
S. Gibbons	835 0 0	G. Porter	659 0 0
F. Hoffman	760 0 0	Griffiths & Co.	619 0 0
J. Mowlem & Co.	724 0 0	Grounds & Newton, Page Green, Tottenham*	603 0 0
Delaney	720 18 9		
J. Sheeham	697 0 0		

DUBLIN.—For electricity works plant, for the Lighting Committee of the Corporation. Mr. Spencer Harty, City Engineer; Mr. R. Hammond, Consulting Engineer :—

Lahmeyer Electrical Co.	£21,348	General Electric Co.	£19,227
D. Kerr & Co.	19,417	Electric Construction Co.	18,955

Alternative Tenders.

Lahmeyer Electric Co.	£22,250	General Electric Co.*	£19,227
Electric Construction Co.	21,789		

ELLAND.—For the erection of a villa in Victoria-road, for Mr. Broadbent Cragg, Victoria-road, Elland. Mr. F. F. Beaumont, architect, Southgate-chambers, Halifax :—

Mason: G. Readyhough, Langdale-street, Elland	£586 10
Joiner: J. Hawkyard, 6, Timber-street, Elland	190 0
Slater and Plasterer: C. Hutchinson & Sons, Timber-street, Elland	98 0
Plumber: F. Horsfall, Huddersfield-road, Elland	100 0

FRINTON-ON-SEA.—For sewering of Oxford-road, for the Frinton-on-Sea Urban District Council. Mr. E. M. Bate, Surveyor, Council Offices, Frinton-on-Sea, Essex :—

E. T. Bloomfield	£164 14 0	R. Moore	£130 3 9
T. Adams	160 3 6	Anderson & Dowson	123 6 3
G. Rackham	158 7 3	G. G. Rayner	122 11 6
C. W. Killingback & Co.	137 3 10	Wilson, Border, & Co., Romford, Essex*	118 9 5
J. C. Trueman	132 8 2		
C. E. Mackenzie	132 4 2		

FRINTON-ON-SEA.—For sewering of Raglan-road, for the Frinton-on-Sea Urban District Council. Mr. E. M. Bate, Surveyor, Council Offices, Frinton-on-Sea, Essex :—

G. Rackham	£251 17 4	J. C. Trueman	£189 9 6
T. Adams	235 10 0	Anderson & Dowson	187 8 6
C. W. Killingback & Co.	213 9 2	R. Moore	185 13 0
E. T. Bloomfield	201 17 2	G. G. Rayner	183 6 9
C. E. Mackenzie	194 10 6	Wilson, Border, & Co., Romford, Essex*	172 3 4

FRINTON-ON-SEA.—For sewering and making-up right-of-way by Harold-road, for the Frinton-on-Sea Urban District Council. Mr. E. M. Bate, Surveyor, Council Offices, Frinton-on-Sea, Essex :—

T. Adams	£693 17 2	C. E. Mackenzie	£623 13 8
Wilson, Border, & Co.	677 11 6	G. G. Rayner	623 0 2
E. T. Bloomfield	676 8 3	C. W. Killingback & Co.	564 3 6
G. Rackham	665 13 8	J. C. Trueman, Swanley, Kent†	542 0 0
R. Moore	664 13 3		
Anderson & Dowson	635 14 4		

FRINTON-ON-SEA.—For making-up and sewering Upper Station-road, for the Frinton-on-Sea Urban District Council. Mr. E. M. Bate, Surveyor, Council Offices, Frinton-on-Sea, Essex :—

Wilson, Border, & Co.	£2,424 11 11	J. C. Trueman	£2,161 5 7
G. G. Rayner	2,353 18 7	G. Rackham	2,130 14 2
T. Adams	2,319 19 11	C. W. Killingback & Co., James-st., Camden Town, N.*	1,979 6 0
E. T. Bloomfield	2,186 19 2		
C. E. Mackenzie	2,175 3 1		

FRINTON-ON-SEA.—For sewering and making-up right-of-way by Public Hall, for the Frinton-on-Sea Urban District Council. Mr. E. M. Bate, Surveyor, Council Offices, Frinton-on-Sea, Essex :—

G. Rackham	£168 10 6	J. C. Trueman	£134 13 10
E. T. Bloomfield	156 4 9	Anderson & Dowson	133 6 9
G. G. Rayner	154 7 6	C. W. Killingback & Co., James-st., Camden Town, N.*	124 1 2
T. Adams	150 19 3		
Wilson, Border & Co.	146 18 0		
R. Moore	143 7 7		
C. E. Mackenzie	135 0 0		

FRINTON-ON-SEA. — For making-up Cambridge-road, for the Frinton-on-Sea Urban District Council. Mr. E. M. Bate, Surveyor, Council Offices, Frinton-on-Sea, Essex :—

G. G. Rayner	£861 14 1	C. E. Mackenzie	£750 14 5
Wilson, Border, & Co.	849 15 8	C. W. Killingback & Co., James-street, Camden Town, N.†..	670 0 7
T. Adams	849 1 4		
J. C. Trueman	808 8 4		
G. Rackham	799 9 4		
E. T. Bloomfield	791 14 4		

GLENTHAM (Lincs.).—For alterations and additions to elementary schools at Glentham, near Market Rasen, for the Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln :—

R. Ranyard	£274 18 1	J. Hill	£177 0 0
Mawer Bros.	234 0 0	G. Coles, Normanby-by-Lincoln*	170 0 0
S. & R. Horton	220 7 7		
F. Scarborough	186 0 0		

HORTON.—For tar-paving of airing-courts at Horton Asylum (8,496 superficial yards), for the London County Council :—

Constable, Hart, & Co., of Kentish Town*
1s. 4d. per superficial yard.

HERTFORD.—For additions to the Herts Reformatory, for the Herts Reformatory, Ltd. Mr. R. Gardner Hammond, architect, 16, Essex-street, Strand, W.C. :—

Ekins & Co.	£2,685 0 0	R. Ginn & Son*	£2,233 0 0
F. Hitch	2,474 10 0		
T. Hunt	2,433 0 0		

HEREFORD.—For alterations to premises in St. Owen-street, for Mr. T. C. Owens. Mr. W. E. H. Clarke, architect and surveyor, Cathedral-chambers, King-street, Hereford :—

W. Rowberry	£177	T. Hiles	£160
W. Bayley	175	C. Cooke*	156
W. Preece	171	R. L. Friend	150

[All of Hereford.]

HITCHIN. — For alterations and additions to Pegsdon House, Hitchin, for Mr. F. H. Bromwich. Messrs. C. E. Mallows & Grocock, architects, 28, Conduit-street, London, W. :—

A. Bavister & Son	£1,856	Harrison	£1,477
J. P. White	1,760	Warton & Dunstall	1,427
Strange & Son	1,619	Wilmot & Sons, Hitchin*	1,356
Page & Sons	1,520		

HITCHIN.—For hot-water supply, water softener, etc., for the Three Counties Asylum, Hitchin. Messrs. Middleton, Hunter, & Duff, civil engineers, 17, Victoria-street, Westminster, S.W. :—

	Hot water.	Softener.	Credit.	Net Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Doulton & Co.	3,522 11 2	2,342 18 7	—	5,865 9 9
J. Fraser & Son	2,841 12 4	1,578 16 8	30 0 0	4,390 9 0
C. J. Worsley	2,734 11 9	1,598 7 4	50 0 0	4,282 19 1
S. Owens & Co.	2,505 13 11	1,718 5 3	50 0 0	4,173 19 2
Wenham & Waters	2,387 0 0	1,694 0 0	10 0 0	4,071 0 0
H. Braithwaite & Co.	2,430 1 5	1,679 15 11	50 0 0	4,059 17 4
Mather & Platt	2,577 2 7	1,271 0 9	25 0 0	3,823 3 4
B. Parker	2,374 17 2	1,496 17 0	60 0 0	3,811 14 0
A. Stubbs	2,554 11 8	1,287 6 9	50 0 0	3,791 18 5
J. Simpson & Co.	2,296 0 0	1,395 0 0	10 0 0	3,681 0 0
H. F. May & Co.	2,368 0 0	1,332 0 0	20 0 0	3,680 0 0
Hiram Maxim Co.	2,253 8 3	1,522 0 2	110 0 0	3,665 8 5
G. N. Haden & Son	2,158 0 1	1,470 10 1	—	3,628 10 2
Gimson & Co.	2,297 3 11	1,342 19 7	20 0 0	3,620 3 6
G. H. Robinson	2,111 7 11	1,423 13 1	60 0 0	3,475 1 0
P. A. Allin & Sons	2,406 16 1	1,086 2 4	50 0 0	3,442 18 5
Jenkins & Son	2,266 2 8	1,114 15 3	—	3,380 17 11
H. F. Joel & Potter	2,242 0 0	1,125 0 0	55 0 0	3,312 0 0
Brightside Foundry Co.*	2,014 0 0	1,126 0 0	25 0 0	3,115 0 0
Lea & Warren	1,864 9 9	980 4 1	23 15 1	2,820 18 9

INGOLDISTHORPE (Norfolk).—For erecting six cottages and offices, for Mr. W. J. Lancaster. Mr. Louis F. Eagleton, architect and surveyor, King-street, King's Lynn. Quantities by architect :—

R. Shanks	£1,880 0	J. Chilvers	£982 0
W. H. Brown	1,289 0	A. Lincoln	980 0
J. Medwell	1,196 10	H. W. Barnes & Co.	948 0
S. Hipwell & Co.	1,095 0	F. Southgate	858 0
Tash, Langley & Co.	1,071 0	Chambers & Sons	857 0
Renaut Bros.	1,045 0	Riches & Son, Dersingham*	777 10
A. F. Foreman	1,020 0		
W. T. Crisp	1,017 0		

‡ Both lots of Cottages.

KETTERING.—For Loddington drainage, for the Kettering Urban District Council. Mr. T. Reader Smith, engineer, Market-place, Kettering :—

Wilkinson Bros.	£2,172 0 0	Goodman & Murkett	£1,910 0 0
A. Lewin & Son	2,035 0 0	C. Chamberlain	1,887 10 6
Kerry & Co.	1,982 0 0	F. Barlow, Rothwell*	1,805 0 0
J. Holme	1,971 14 6		

KETTERING.—For stables, for the Kettering Urban District Council. Mr. T. Reader Smith, engineer, Market-place, Kettering :—

Haycock & Sons	£424 0 0	J. Norris	£369 0 0
Brown & Son	423 0 0	S. Manton	366 15 0
Lewin & Son	393 0 0	H. Judkin	365 5 0
O. P. Driver	377 0 0	A. Johnson	362 16 0
Kettering Co-operative Builders	375 10 0	Smith & Bunning	359 0 0
A. Bamford	374 0 0	C. Andrew	355 0 0
Phillips & Slow	370 0 0	J. Goodwin, Kettering*	350 0 0

KINGHAM, Oxon.—For erecting a small house, for Mr. Basil de Selincourt. Messrs. Healing & Overbury, architects, Lloyd's Bank-chambers, Cheltenham :—

Messrs. Groves & Sons, Melton-under-Wychwood, Oxon* £825

KING'S LYNN.—For new stables, carriage-house, boxes, hay and straw loft, harness-room, etc., for Mr. T. Andrews, King's Lynn. Mr. Louis F. Eagleton, architect, King-street, King's Lynn. Quantities by architect :—

W. H. Brown	£469 0 0	Renaut Bros.	£425 0 0
R. Dye	459 0 0	H. W. Barnes & Co.	420 0 0
Read & Wildbur	439 0 0	A. F. Foreman	405 18 0
R. Shanks	435 0 0	Tash Langley & Co.*	403 0 0
Bardell Bros.	480 0 0		

LARGS.—For the construction of a storage reservoir, etc., on Noddsdale Water at Outerwards, for the Largs Town Council. Mr. W. R. Copland, C.E., 146, West Regent-street, Glasgow. Quantities by engineer :—

Kirkwood, Kerr, & Co.	£12,627 17 11	J. Osborne	£9,996 6 11
A. Stark & Sons	11,494 12 11	J. Young, Ltd.	9,982 18 10
R. C. Brebner & Co.	11,257 5 0	W. G. Flett	9,700 0 0
J. Urquhart	11,117 14 6	R. C. Crawford	9,418 6 4
D. Murray	10,831 8 6	Shanks & McEwan	9,080 12 10
J. Miller	10,531 6 0	P. McBride & Co.	8,661 3 11
W. Kennedy, Ltd.	10,245 6 5	H. Hastie, Bathgate*	8,120 11 7

LEAVESDEN (Herts).—For repairs to chimney stacks at Leavesden Asylum, near Watford, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief :—

J. Wilson	£890 0 0†	Gardner & Hazell	£331 0 0
Blackburn, Starling, & Co.	882 0 0	S. P. Bidder & Co.	225 0 0
T. Robinson	589 0 0	Universal Engineering Co., Chesterfield-street, Nottingham*	199 0 0†
G. Wiggs	510 0 0		
W. Hogg & Son	392 0 0		
Alexander, Nevins, & Co., Ltd.	350 0 0	C. J. Utley	137 10 8

LICHFIELD.—For Hazel Slade sewerage works, for the Rural District Council. Mr. C. O. Rawstron, Surveyor, 20, Walsall-road, Lichfield :—

Johnson & Langley	£526 8 6	Barker Bros.	£496 0 0
S. Wood	519 19 4	E. Blewitt, Hednesford, nr. Stafford*	495 5 2½
S. Barriet	502 8 6	R. Jewell	474 12 3
W. D. Oakley	497 18 4		

LIVERPOOL.—For Blundellsands Hotel alterations and addition, for Messrs. Threlfalls' Brewery Co., Ltd. Mr. Frederick G. Fraser, architect, 19, Oldhall-street, Liverpool. Quantities by the architect :—

I. Dilworth	£4,300 0 0	S. Fowler	£3,643 0 0
J. Pyett	4,019 7 0	J. Taylor	3,640 0 0
R. Costain & Sons	3,900 0 0	G. Johnson	3,589 0 0
Brown & Backhouse	3,780 0 0	Broadbridge & Reid	3,517 0 0
		G. E. Johnson*	3,483 0 0

LONDON. — For masons' and paving work and materials, for the Hackney Borough Council. Mr. Norman Scorgie, Borough Engineer and Surveyor, Town Hall, Hackney, N.E. :—

	For One Year. Per cent. above Prices in Printed Schedule.	For Two Years. Per cent. above Prices in Printed Schedule.	For Three Years. Per cent. above Prices in Printed Schedule.
T. Adams	12½	12½	12½
G. Porter	10	8½	7
G. J. Anderson	5	Not filled in.	5
W. Griffiths & Co., Ltd., 35-39, Hamilton House, Bishopsgate St. Without, E.C.	3*	3	3
		Per cent. below Prices in Printed Schedule.	Per cent. below Prices in Printed Schedule.
D. R. Paterson	At prices in printed schedule	1½	2½
G. Battersby	Informal.	Dressing only quoted for.	—

LONDON.—For provision of conveniences, refreshment room, shelter, and foreman's offices, Manor House Gardens, for the London County Council :—

General Builders, Ltd.	£897	F. Lapthorne & Co.	£549
F. & H. F. Higgs	598	R. Harding & Son, London*	535
Holloway Bros., Ltd.	577		

TENDERS.—*Continued on page 567.*

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*Shire Hall, Bury St. Edmunds	West Suffolk Standing Joint Com...	50*l.*, 30*l.*, 20*l.*	July 2

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be Delivered
Concrete River Wall (400 ft.)	Darlington Corporation	G. Winter, Borough Surveyor, Town Hall, Darlington	May 19
Iron Palisading at Gasworks	do.	do.	do.
Stores	Tyne Improvement Commission	Commissioners' Engineer, Berwick-street, Newcastle-on-Tyne	May 21
Additions to Altdinnie, Aboyne	Major C. Davidson	Jenkins & Marr, Architects, 16, Bridge-street, Aberdeen	do.
Stables	do.	do.	do.
Lime, Tar, etc.	Port Glasgow Town Council	W. Mackie, Gas Manager, Port Glasgow	May 23
Switchboard, etc.	Kirkcaldy Lighting Committee	O. F. Francis, Burgh Electrical Engineer, Kirkcaldy	do.
Alterations, etc., to Carbeal House, Torpoint		R. Wavish, Elm Cottage, Torpoint, R.S.O.	do.
Kitchen at Workhouse	Belfast Guardians	J. W. Robb, Clerk, Union Workhouse, Belfast	May 24
755 yds. of Unclimbable Wrought-Iron Railing	Rochdale General Purposes Com.	S. S. Platt, Borough Surveyor, Town Hall, Rochdale	do.
Removing Contents of Ashpits, etc., Stanwix	Carlisle R.D.C.	Clerk, 7, Victoria-place, Carlisle	do.
Police Station, Canterbury-road, Perry Barr	Staffordshire Joint Committee	W. H. Cheadle, County Surveyor, County-buildings, Stafford	do.
Rebuilding the Greyhound, Christchurch, nr. Newport	Messrs. Griffiths Bros.	Lansdowne & Griggs, Archs., Metro. Bank-ch'b'rs., Newport, Mon.	do.
Cattle Houses, etc., Trevego, Saint Winnow	Mr. J. B. Fortescue	H. W. Row, Clerk of Works, Yard Office, Boconnoc	do.
Road Works (Killder-street, Military-road, etc.)	Tynemouth Corporation	J. F. Smillie, Borough Surveyor, Tynemouth	do.
Large Stable, Burraton Coombe, near Saltash		Jeffoed & Sons, Quarry Offices, Burraton Coombe	do.
New Road, Provan Gas Works	Glasgow Corporation	A. Wilson, Engineer, 45, John-street, Glasgow	do.
Painting, Decorating, etc., of Bandstands	Leeds Corporation	City Engineer's Office, Leeds	May 25
Materials and Stores	Bolton Electricity Committee	A. A. Day, Borough Electrical Engineer, Spa-road, Bolton	do.
Eight Dwelling-houses, Dewsbury		T. Kershaw, Architect & Surv., L. & Y. Bank-chambers, Halifax	do.
Two Semi-Deta. Villa Residences, Burnley-rd., Halifax		G. Buckley & Son, Architects, Tower-chambers, Halifax	do.
Materials	Irlam U.D.C.	J. Cooke, Clerk, Council Offices, Irlam	do.
Paving, etc. (Labour only) and Hire of Steam Roller	do.	do.	do.
Structural Alterations in Basement of Market Tavern	Bradford Corporation	F. E. P. Edwards, City Arch., Whitaker-b'ldgs, Brew'ry-st., Bradf'd	do.
Materials	Ipswich Corporation	E. Buckham, Borough Surveyor, Town Hall, Ipswich	do.
Highway Work, Ashley, Baguley, etc.	Bucklow R.D.C.	J. Burgess, Highway Surveyor, Tabley Superior, Knutsford	do.
Heating, etc., Atherton Free Library		Bradshaw & Gass, Architects, Silverwell-street, Bolton	do.
Romanby Sewage Works	Northallerton R.D.C.	W. Fowle, Clerk, Northallerton	do.
Fencing and Laying out Land at Outfall, Normanby	do.	do.	do.
Painting, etc., Workhouse, Smithdown-road	Toxteth Park Guardians	J. Moulding, Clerk, 15, High Park-street, Toxteth, Liverpool	do.
Painting Cemetery	Hove Corporation	H. H. Scott, Borough Surveyor, Town Hall, Hove	do.
15-ton Electric Crane	Coventry Corporation	J. A. Jeckell, Corporation Electricity Works, Sandy-la., Coventry	do.
Foundations, etc., Elec. Gen. Station, Summer-lane	Birmingham Electric Supply Com.	E. Harper & Bro., Arch., Ruskin-chbrs, Corporation-st., Birming'm	do.
Workmen's Cottages, Dalbeattie		C. C. Doig, Architect, Elgin	May 26
Creosoted Pine Sleepers	Bombay, etc., Railway Co.	T. W. Wood, Sec., Gloucester Ho., Bishopsgate-st. Without, E.C.	do.
Fishplates	do.	do.	do.
Stores (Tramway)	Sunderland Corporation	A. R. Dayson, Tramway Offices, Sunderland	do.
A Villa, Brynmawr	Mr. W. Jones	Mr. Jones, Draper, Beaufort-street, Brynmawr	do.
Four Houses	do.	do.	do.
Abutments, etc., of Bridge across Barnston Drain, etc.	Hull Corporation	A. E. White, City Engineer, Town Hall, Hull	do.
Granite	Feltham U.D.C.	G. W. Manning, Surveyor's Office, Feltham	do.
*Isolating Wks, Tooting Home, Elec. Bells, etc., Infirm.	Wandsworth Union	Clerk, Union Offices, St. John's Hill, S.W.	do.
Materials	Wilmslow U.D.C.	A. Scott Cartwright, Surveyor, Council Offices, Wilmslow	May 27
One 500 kw. 3 phase Induction Motor Generator	Sunderland Corporation	J. F. C. Snell, Boro' Electrical Engineer, Town Hall, Sunderland	do.
Portland Cement	Brighton Borough Council	F. J. C. May, Borough Engineer & Surveyor, Town Hall, Brighton	do.
Four Shops, with Arcade, in Market-place	Radcliffe U.D.C.	Engineer to Council, Council Offices, Radcliffe	May 28
Alterat'ns, etc., Penuel Welsh Cal. Meth. Ch., Ferndale		R. S. Griffiths, Architect and Surveyor, Tonypandy	do.
Sewage Works Extension (Contract No. 4)	Haworth U.D.C.	W. B. Woodhead & Sons, Engineers, 18, Exchange, Bradford	do.
Extension of Engin-hse., Electric Lgt. Wks., Sandy-la.	Coventry Corporation	J. E. Swindlehurst, City Engr. & Surv., St. Mary's Hall, Coventry	do.
Additions, etc., Railway-inn, Abertillery	Messrs. J. R. & T. A. Webb, Ltd.	R. L. Roberts, Architect, Abercarn	do.
Stabling	do.	do.	do.
Isolation Hospital	Thirsk R.D.C.	C. McC. Swarbreck, Clerk, Thirsk	do.
Joiner's Work, Salterhebble		G. W. Wilson, 3, Exeter-street, Salterhebble	May 30
Tar Paving, Norbiton Park Estate, New Malden	Maldens and Coombe U.D.C.	District Surveyor, Cambridge-road, New Malden	do.
Three Timber Groynes on South Beach	Lowestoft Town Council	G. H. Hamby, Borough Engineer, Town Hall, Lowestoft	do.
Private Street Works	Finchley U.D.C.	Surveyor, Council Offices, Church End, Finchley	do.
Painting Ventilating Shafts	Guildford Town Council	C. G. Mason, Borough Surveyor, Tuns Gate, Guildford	do.
Converting Boiler House into Mortuary	do.	do.	do.
Vertical Fire Pumps	The L.C.C.	Clerk of the Council, County Hall, Spring Gardens, S.W.	do.
Four Mechanical Stokers	Warrington Electricity Committee	F. V. B. Mathias, Boro' Electrical Engineer, Howley, Warrington	do.
Water Softener and Purifier	do.	do.	do.
Fire-alarm System	Fulham Guardians	E. J. Mott, Clk., G'dians' Offices, Fulham Palace-rd., Hammersmith	do.
Alterations, etc., to Retail Fish and Poultry Market	Leicester Markets' Committee	E. G. Mawbey, Borough Engineer, Town Hall, Leicester	do.
Stores, Newton Bank	Winsford Industrial Co-op. Society	W. Fryer, Secretary, 21, High-street, Winsford	do.
Dwelling-house and Surgery, Aberbargoed	Dr. J. Thomas	G. Kenshole, Architect, Station-road, Bargoed	do.
Bonnybridge Drainage	Eastern District Com., Stirling C.C.	Warren & Stuart, Engineers, 94, Hope-street, Glasgow	do.
Offices, St. George's School, Abbey Hey	Gorton Education Committee	J. W. Wiles, Surveyor, Town Hall, Gorton	do.
*Double Culvert Arch and Single Culvert	Newton Abbot U.D.C.	J. Chudleigh, Architect, Newton Abbot	do.
*Road and Sewer Works	Hornsey Town Council	Council's Engineer, Southwood-lane, Highgate, N.	do.
*Painting, etc., Schools at Southall	St. Marylebone Guardians	Superintendent of the Schools, Southall	May 31
Cable	Rotherham Corporation	Borough Electrical Engineer, Town Hall, Rotherham	do.
Meters	do.	do.	do.
Materials	Septon R.D.C.	J. Roscoe, Highway Surveyor, Kirkby, near Liverpool	do.
Breaking Boulders, Paving, and Cartage	do.	do.	do.
Tar Macadam Shed, Olive Grove Highway Depot	Sheffield Corporation	C. F. Wike, City Surveyor, Town Hall, Sheffield	do.
Twenty Cottages at Chopwell	Consett Iron Co., Ltd.	C. E. Oliver, Architect, Office of the Company, Consett	do.
Twelve Cottages at Leadgate	do.	do.	do.
Reconstruction of Out-offices to Cottage, Consett	do.	do.	do.
Painting Police Stations, Driffield, etc.	Standing Joint Com. of E. Riding	County Surveyor, Beverley	do.
900 Yds. of 6-in. c.i. Pipes	Nelson Water Committee	J. Hartley, Waterworks Manager, Town Hall, Nelson	do.
Calvinistic Methodist Chapel, Abercanaid		C. M. Davies, 112, High-street, Merthyr	do.
Granite and Flints	Maldon Borough Council	T. R. Swales, Borough Surveyor, Municipal Offices, Maldon	do.
Ironwork (Sewerage Works, Contract 3)	Drighlington U.D.C.	J. Waugh, C.E., Simbridge-chambers, Bradford	do.
*New Post Office at Barnet	H.M. Works	H.M. Office of Works, Storey's-gate, S.W.	June 1
Chancel, Sacristies, etc., St. Patrick's Cath., Newry	Rev. Dr. O'Neill	A. Bruntz, C.E., 1, College-street, Dublin	do.
Clearing Stanley Grove Site	Manchester Royal Infirmary	E. T. Hall and J. Brooke, 18, Exchange-street, Manchester	do.
Hot-water Heating Apparatus, Technical Schools	Plymouth Education Authority	H. J. Snell, Architect, 11, The Crescent, Plymouth	do.
Paving Works	Littlehampton U.D.C.	H. Howard, F.S.I., Town Offices, Littlehampton	do.
Boundary Wall at Churchyard, Ainderby Steeple		Churchwardens, Ainderby Steeple Vicarage, Northallerton	do.
Buildings, Donegall-square South, Belfast	Scottish Temp. Life Assur. Co., Ltd.	S. C. Hunter, Building Surveyor, Wellington-place, Belfast	do.
Paving, etc., in High-street, Sheep-street, etc.	Petersfield U.D.C.	H. T. Keates, Town Surveyor, Petersfield	do.
Broken Granite	Enfield U.D.C.	R. Collins, Surveyor, Public Offices, Enfield	do.
Granite, Slag, Gravel, etc.	Rothwell U.D.C.	T. C. Betts, Surveyor, Market House, Rothwell, Northants	do.
*Extension of Town Hall	Fulham Borough Council	Borough Surveyor, Town Hall, Fulham, S.W.	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be Delivered
Buckingham-road Works, Hampton	Hampton U.D.C.	S. H. Chambers, Surveyor, Public Offices, Hampton, Middlesex	June 2
*Supply, etc., of Furniture at New Library	Woolwich Borough Council	Council's Engineer, Maxey-road, Plumstead, S.E.	do.
Stone Bridge over the Swale at Hoggarth's, Mocker	Reeth R.D.C.	T. Brown, Surveyor, Low Row, Richmond, Yorks	June 3
1,000 Tons of Granite	Branksome U.D.C.	S. J. Newman, F.R.I.B.A., Coun.-cha., Branksome, P'kstone, R.S.O.	do.
*Supply Steam Piping and Painting and Whitewashing	St. George-in-the-East Guardians	Guardians' Offices, Raine-street, Old Gravel-lane, E.	do.
Section S. Motors	Pontypridd U.D.C.	R. P. Wilson, Engineer, 66, Victoria-street, Westminster	June 4
Colliery Timber	South Hetton Coal Co., Ltd.	J. R. Lambert, South Hetton, Sunderland	do.
Annual Contracts	Trustees of Clyde Navigation	Superintendent of Stores, 16, Robertson-street, Glasgow	do.
House, St. Abbs		E. K. Carmichael, Architect, 14, Queen-street, Edinburgh	June 6
Materials	Leeds R.D.C.	J. H. Ford, Clerk, Poor Law Offices, Leeds	do.
150 Tons of Rolled Steel Rails	Southampton Corporation	J. A. Crowther, Boro' Engineer, Municipal Offices, Southampton	do.
Recasting Cemetery Bell	Warrington Cemetery Committee	T. Longdin, Borough Surveyor, Warrington	do.
5,800 yds. of c.i. Water Mains	Epsom U.D.C.	W. V. Graham, M.Inst.C.E., 5, Queen Anne's-gate, Westminster	do.
*Alterations and Additions to Out-patients' Block	Gravesend Hospital Committee	The Secretary, Gravesend Hospital	do.
Making-up Lovelace-road, Long Ditton	Esher and Ditton U.D.C.	A. J. Henderson, Council's Surveyor, Thames Ditton	June
Cumwhinton Reservoir, etc. (Contract No. 1)	Carlisle Corporation	J. Mansergh & Sons, Engineers, 5, Victoria-street, Westminster	do.
Repaving Wandsworth Bridge	The L.C.C.	Engineer's Department, County Council, Spring-gardens, S.W.	do.
Part Repaving Vauxhall (temporary) Bridge	do.	do.	do.
Gas Installation at Technical Schools	Plymouth Education Authority	H. J. Snell, Architect, 11, The Crescent, Plymouth	do.
Storm-water Culvert at Low Lights, N. Shields	Tynemouth Corporation	J. F. Smillie, Borough Surveyor, Tynemouth	do.
Heating of Tramway Depot	Bury Tramway Committee	A. W. Bradley, Borough Engineer, Bury	do.
*Making-up Roads	Tottenham U.D.C.	Council's Engineer, 712, High-road, Tottenham	do.
*New County Court and Offices, Croydon	Commissioners of H.M. Works, etc.	Collector, Inland Revenue Office, Croydon	do.
*Erection of Electric Generating Station	Handsworth U.D.C.	Henman & Cooper, 19, Temple-street, Birmingham	June 8
Effluent Pumping Station, Beaumont Leys	Leicester Sewage W'ks. Committee	E. G. Mawbey, Borough Engineer, Town Hall, Leicester	June 9
Permanent Way and Paving Four Miles	Exeter Corporation	T. Moulding, City Eng'r, Mun. Offices, Southernhay West, Exeter	do.
Overhead Electrical Equipment	do.	do.	do.
Insulated Cables	do.	do.	do.
Twelve Double-Decked Single Track Motor Cars	do.	do.	do.
Reconstructing part of Promenade Pier	Ryde Pier Co.	T. R. Saunders, C.E., Belgrave-chambers, Ventnor	June 10
*New Coastguard Buildings at Leven, Fife	Admiralty	Director of Works Department, 21, Northumberland-avenue, W.C.	do.
Sewerage and Sewerage Disposal, Lochmaben	Town Council	D. Balfour & Son, Eng'rs., 3, St. Nicholas-b'dgs, N'wc'tle-on-Tyne	June 11
Stores	Cambrian Ry. Co.	Stores Offices, Cambrian Works, Oswestry	do.
*Erection of Bridge and Road Diversion Works	Erith U.D.C.	District Council Offices, Erith, Kent	June 13
*Additions, etc., to Electric Light Station	do.	W. Egerton, 12, Queen's-road, Erith	do.
*Main Drainage Works	Esher and Ditton U.D.C.	Council's Engineer, Portsmouth-road, Thames Ditton	do.
*Biennial Contracts, Repairs, etc., Home Dept. R.E.	War Office	Royal Engineer Office, 41, Charing-cross, S.W.	do.
do. do. Caterham, etc.	do.	do.	do.
Two Continuous Coal and Ash Conveyors	London County Council	County Hall, Spring-gardens, S.W.	June 14
*Balcony Dwellings for Working Classes	do.	Architect's Department, 11, Charing Cross-road, W.C.	do.
*Additions to Technical Schools	Southend-on-Sea Corporation	Town Clerk, Southend-on-Sea	do.
*Making-up and Paving Street	Fulham Borough Council	Borough Surveyor, Town Hall, Fulham, S.W.	June 15
Insulated Cables and Overhead Conductors	Johannesburg Municipal Council	Mordey & Dawbarn, Engineers, 82, Victoria-street, London	July 4
24 Miles Electric Tramways	Shanghai Municipal Council	J. Pook & Co., 63, Leadenhall-street, London, E.C.	July 30
230 Tons of Steel Rails		Witty & Wyatt, Ltd., 88, Leadenhall-street, E.C.	No date
C.I. Warning Posts (Motor Car Act)	Southampton Corporation	County Surveyor, The Castle, Winchester	do.
Setting a New Boiler, 30 by 8		Manager, Aberbeeg Colliery, Aberbeeg	do.
Painting Schools and Caretakers' Houses	Newcastle-on-Tyne Education Com.	A. Goddard, Sec., Educa. Offices, Northumberland-rd., Newcastle	do.
Residence, Priory-road, Felixstowe		H. W. Buxton, Architect, Bank Corner, Hamilton-rd., Felixstowe	do.
Pair of Shops and Houses, Hamilton-rd., Felixstowe		do.	do.
7 Ton Steam Crane, Navvies	Tynemouth Corporation	Secretary of the Water Department, Town Hall Bldgs., Tynemouth	do.
Steam Bucket Hopper Dredger	Tralee, etc., Pier & Harbour Commrs.	C. E. Leahy, Secretary, Canal Offices, Tralee	do.
Furnishing Offices, etc., Crown-court, Carlisle	County Property Committee	C. W. Allan Hodgson, Clerk, Cumberland County Council, Carlisle	do.
Woodwork for August Show, Hillsborough-park	Sheffield & Ecclesfield Farmers' Club	V. Siddall, Wadsley Bridge	do.
130 Yds. of c.i. Pipes		Manager, Gas Works, Musselburgh, Edinburgh	do.
Linfield New Football Ground, Lower Windsor	Rowlands Gill Workmen's Club, Ltd.	128, Albion-place, Dublin-road, Belfast	do.
Latrine Water-closets		T. H. Stafford, Arch., South Garesfield Colliery, Lints Green, R.S.O.	do.
New Road, Near Brecon	Birmingham Electric Committee	B. L. Pritchard, Surveyor, Brecon	do.
*New Electric Generating Station, Summer-lane	War Department	Ewen Harper & Bro., Corporation-street, Birmingham	do.
*Painting, etc., Works, Leicester and Strensall Camp		Royal Engineer Office, Fishergate, York	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Building Department Manager	Co-operative Wholesale Society	Not Stated	May 23
*Head of Engineering Department	Northern Polytechnic	275*l.*	June 8
*Teacher of Cookery	do.	110*l.*	do.
*Teacher of Architectural Drawing	do.	Not Stated	do.
*Teacher of Brickwork	do.	Not Stated	do.

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, xvi.

TENDERS.—*Continued from page 565.*

LONDON.—For construction of a public underground convenience at Lower Clapton-road, for the Hackney Borough Council. Mr. Norman Scorgie, Borough Engineer and Surveyor, Town Hall, Hackney, N.E.:—

W. S. Sharpin	£1,660	J. Parsons	£1,523
C. Castle & Son	1,615	Foster Bros.	1,500
A. E. Symes	1,600	W. Shurmur & Sons, Ltd., Riverside Works, Upper Clapton, N.E.*	1,485
Spiers & Sons	1,598		
C. Kind	1,575		
G. Jennings, Ltd.	1,572		

LONDON.—For repairs to the Islington station of the London Salvage Corps. Mr. Arthur F. Briggs, architect, 9, Queen Victoria-street, E.C.:—

Falkner & Sons	£966	Hayward & Son	£798
Ashby & Horner	898	Mansfield & Son*	744
Trollope & Sons and Colls & Sons	890		

LONDON.—For rebuilding premises at 112, Prince-street, Deptford, S.E., for the Lift & Hoist Co. Mr. John Jas. Downes, architect, 199, Lewisham High-road, S.E.:—

W. O. Collingwood* £557

LONDON.—For alterations to Nos. 1 and 2, Basing-place, and 43, 45, and 49, Kingsland-road, Shoreditch, N.E., for Messrs. Thos. Eaton & Co. Mr. John Jas. Downes, architect, 199, Lewisham High-road, S.E.:—

Shewin Bros. & Co.	£2,394 0 0	S. R. Best	£2,021 0 0
R. Groves	2,296 0 0	T. D. Leng	1,900 0 0
Sheffield Bros.	2,129 0 0	W. O. Collingwood	1,784 18 6
Josolyne & Young	2,095 0 0	R. Schooley & Son*	1,676 0 0
J. Ivey	2,050 0 0		

LONDON.—For the erection of combined band-stands and shelters, for the London County Council:—

	Bostall-woods.	Hackney-downs and South Millfield.	Golder's-hill.	Little Wormwood-scrubs.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Duncan Tucker, Tottenham*	321 0 0	319 0 0 each	336 0 0	357 10 0
P. King & Co.	494 0 0	452 10 0 „	454 5 0	484 0 0
Grover & Son	409 0 0	409 0 0 „	465 0 0	466 0 0
W. H. Lascelles & Co.	459 0 0	459 0 0 „	470 0 0	555 0 0

LONDON.—For hardwood paving in the western part of Shacklewell-lane, for the Hackney Borough Council. Mr. Norman Scorgie, Borough Engineer and Surveyor, Town Hall, Hackney:—

	Wilkinson Bros.	J. Mowlem & Co., Ltd.	Acme Flooring & Paving Co. (1904), Ltd.	G. J. Anderson.	Improved Wood Pavement Co., Ltd.	W. Griffiths & Co., Ltd.*
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.
Excavating for, and providing and laying concrete foundation, and Jarrah wood paving complete, per superficial yard	1 0 0	0 17 6	0 17 4	0 17 3	16 5‡	0 15 11
Extra excavation and cartage (if required) per cubic yard	0 5 0	0 4 0	0 5 0	0 3 6	5 0	0 3 5
Extra concrete (if required) per cubic yard	0 17 0	0 16 0	0 16 0	0 15 0	16 0	0 14 6
Fine extra concrete (if required) per cubic yard	1 1 0	1 3 3	1 1 0	1 7 6	18 0	1 8 0

‡ If Black-butt, 15s. 5d.

LONDON.—For new factories, Wood Green, for Messrs. G. O. Barratt & Co. Mr. Francis L. Pither, architect, 91, Tollington-park. Quantities by Messrs. Westmoreland & Horder, 3, Pall-mall East:—

Butcher	£8,640 0 0	Patman & Fothering-ham	£7,823 0 0
Smith & Son.	8,500 0 0	Parnell & Son	7,606 10 0
Moss & Co. ..	8,475 5 1	Willmott & Sons.....	7,337 0 0
Ford & Walton ..	8,143 0 0	Hawes, Wood Green*	7,267 8 0
Allen & Sons	7,925 0 0		

MANCHESTER.—For heating, etc., at the Bethesda Home extension, Cheetham Hill. Messrs. Maxwell & Tuke, architects, Manchester:—

Heating: Saunders & Taylor £259 10

Electric Lighting and Bells: Davenport, Sparrow, & Co. 118 0

NOTTINGHAM.—For the erection of additions to Albion Chapel, Nottingham. Mr. H. Allcock, architect, Nottingham:—

J. G. Short	£565 0 0	Boothe*	£528 9 8
Wibberley & Son	530 0 0		

RAITH.—For 300 lineal yds. of fireclay pipes, etc., from Raith Gate along Boglily-road, for Mr. R. C. Munro-Ferguson. Messrs. W. D. Sang‡ & Lockhart, C.E., Kirkcaldy:—

Stratton & Co..	£327 8 0	D. Whyte	£298 5 6
A. Gray & Co. .	325 15 5	A. Fraser	289 18 6
D. Gilmour	314 11 7	W. Brown	276 1 3
Macleish, Morrison, & Co. ..	308 3 0	D. Wright	265 1 0
A. Mitchell....	306 9 7	J. Kennedy, Kirkcaldy* ..	240 2 2

REDDITCH.—For shops and house, etc., Crabbs Cross, for the Alcester Co-operative Industrial Society, Ltd. Mr. J. W. Adams, architect, Hay Mills, Birmingham. Quantities by architect:—

G. Hains & Son ..	£1,638	C. G. Haine & Sons	£1,460
W. H. Gibbs.....	1,575	T. Yeomans	1,450
E. Giles & Sons ..	1,497	G. Huxley, Astwood Bank*	1,397
H. Surman	1,475		

ROTTINGDEAN.—For an open air swimming bath on land adjoining the Warren Farm School, for the Brighton Guardians. Mr. E. Wallis Long, architect, 40, Marlborough-place, Brighton:—

W. Olliver, Brighton* £500

RUTHIN.—For additions and alterations to premises, for the Ruthin County School for Girls. Mr. J. Hughes, architect, Denbigh:—

T. Jones	£1,200 16 0	R. Evans & Sons	£797 10 0
T. Roberts ..	996 0 0	Williams Bros., Ruthin*	788 10 0
W. Roberts ..	956 0 0		
J. Daniels....	844 12 0		

[Architect's estimate, £788.]

SLOUGH.—For erecting a branch shop in Stoke-road, for Slough and District Co-operative Society, Ltd. Mr. F. T. Deverell, architect:—

J. Deverill	£720	H. Burfoot & Son, Eton Wick*	£660
H. D. Bowyer	700	L. B. Lane & Son ..	620

SNETTISHAM (Norfolk).—For erecting six cottages and outoffices, for Mr. W. J. Lancaster. Mr. L. F. Eagleton, architect and surveyor, King-street, King's Lynn. Quantities by architect:—

W. H. Brown..	£1,269 0 0	A. Lincoln ..	£970 0 0
J. Medwell....	1,210 0 0	Barnes & Co.	948 0 0
S. Hipwell & Co.	1,095 0 0	R. Shanks‡..	1,880 0 0
Renaut Bros...	1,055 0 0	Chambers & Sons, Snettisham* ..	857 0 0
Tash, Langley & Co.	1,051 0 0	F. Southgate	838 0 0
W. T. Crisp ..	1,013 0 0	Riches & Son	771 10 0
F. Anderson ..	1,009 0 0		
A. F. Foreman	995 0 0		
J. Chilvers	995 0 0		

‡ Twelve cottages.

SOUTHAMPTON.—For the erection of three blocks of artisans' cottages, north of Simnel-street, for the Corporation. Mr. C. J. Hair, architect, 23, Portland-terrace, Southampton:—

Martin Wells, & Co.	£7,620 0 0	Dyer & Sons..	£6,800 0 0
H. Stevens & Co.	7,354 0 0	Golding & Ansell	6,459 0 0
Wort & Way ..	7,270 9 7	J. Nichol, Southampton*	6,200 0 0
Jenkins & Sons	6,936 0 0		

SUSWORTH.—For building an elementary school at Susworth, Scotter, for the Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln:—

J. W. Briggs ..	£896 0 0	H. Kelsey	£513 14 8
J. E. Buttrick .	598 15 0	H. S. Brown ..	510 0 0
J. W. Thompson	560 0 0	G. R. Usher ..	495 0 0
A. Loughton ..	515 0 0	F. Scarborough, Lincoln*	466 7 0

TIPTON (Staffs.).—For heating apparatus at new schools, Park-lane, for the Urban District Council. Mr. A. Long, architect, 21, New-street, West Bromwich:—

Kallaway & Co., Birmingham* .... £378 17‡

‡ Including £19 for an extra boiler.

TOTNES.—For new laundry, mangle-room, wash-house, etc., at the Union Workhouse. Mr. W. F. Tollit, architect, 10, High-street, Totnes:—

H. Drew.....	£876	T. Brook, Totnes* ..	£747
R. Veale & Son	819	R. E. Narracott	735
G. Leaman	780		

WALLASEY.—For construction of a branch railway to gasworks, including weighbridge, etc., for the Urban District Council. Mr. J. H. Crowther, engineer:—

R. White & Sons, Widnes..... £2,197

WATERFORD (Ireland).—For building two steel bridges (Ballynecty bridge and Bartlihaels bridge), for the County Council:—

J. McGrath, Dungarvan* £1,985

WILMSLOW.—For residence at Wilmslow, Cheshire, for Mr. F. C. Lock. Quantities by Messrs. Groome & Bettington, Palace-chambers, Hereford:—

L. Brown & Sons	£901 10	Peace & Norquoy	£810 0
J. J. Parish	849 0	J. K. Coates, Wilmslow*	797 7
Adkinson	828 0		

WOODBURN (Ireland).—For six hill cuttings, and building a bridge at Woodburn, for the Larne Rural District Council. Mr. John H. Brett, C.E., County Court House, Belfast. Quantities by engineer:—

Woodburn Bridge.

A. Rodgers, Carrickfergus £739 0 0

Hill Cutting.

J. Dale, Drains Lane	500	0	0
R. J. Stewart, Ballyboly, Ballynure ..	245	17	6
Do. Do. ..	204	17	6

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